Number 4
Volume XLIX

JULY, 1915

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1868

TEXTILE WORLD RECORD

1915

Special Features

British Embargo on Wool

Preparing for a Famine in Dyestuffs

"Straight Line" Textile Calculations

After Treatment of Cotton Goods

Cost of Wool Goods in English Mills

Finishing Knit Underwear

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LORD & NAGLE COMPANY · BOSTON, MASS.

JOHN JEPSON, BOSTON.

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The TEXTILE-FINISHING MACHINERY CO.

Howard Building, Providence, R. I.

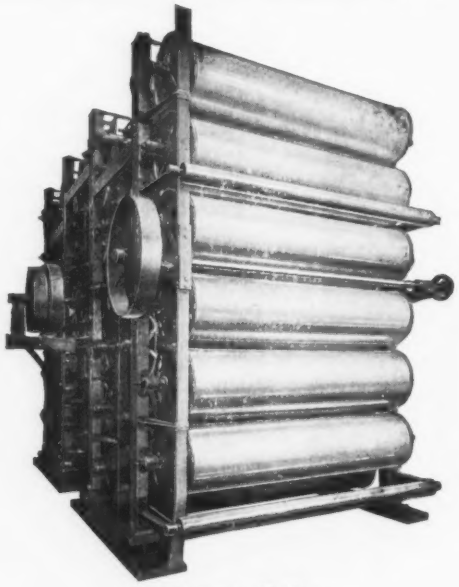
BUILDERS OF

Singeing, Bleaching, Mercerizing, Dyeing, Drying, Printing and Finishing Machinery

FOR

TEXTILE FABRICS AND WARPS

Plans and Estimates for Complete Plants



Upright Drying Machine

ALL KINDS OF

Horizontal and Upright Drying Machines

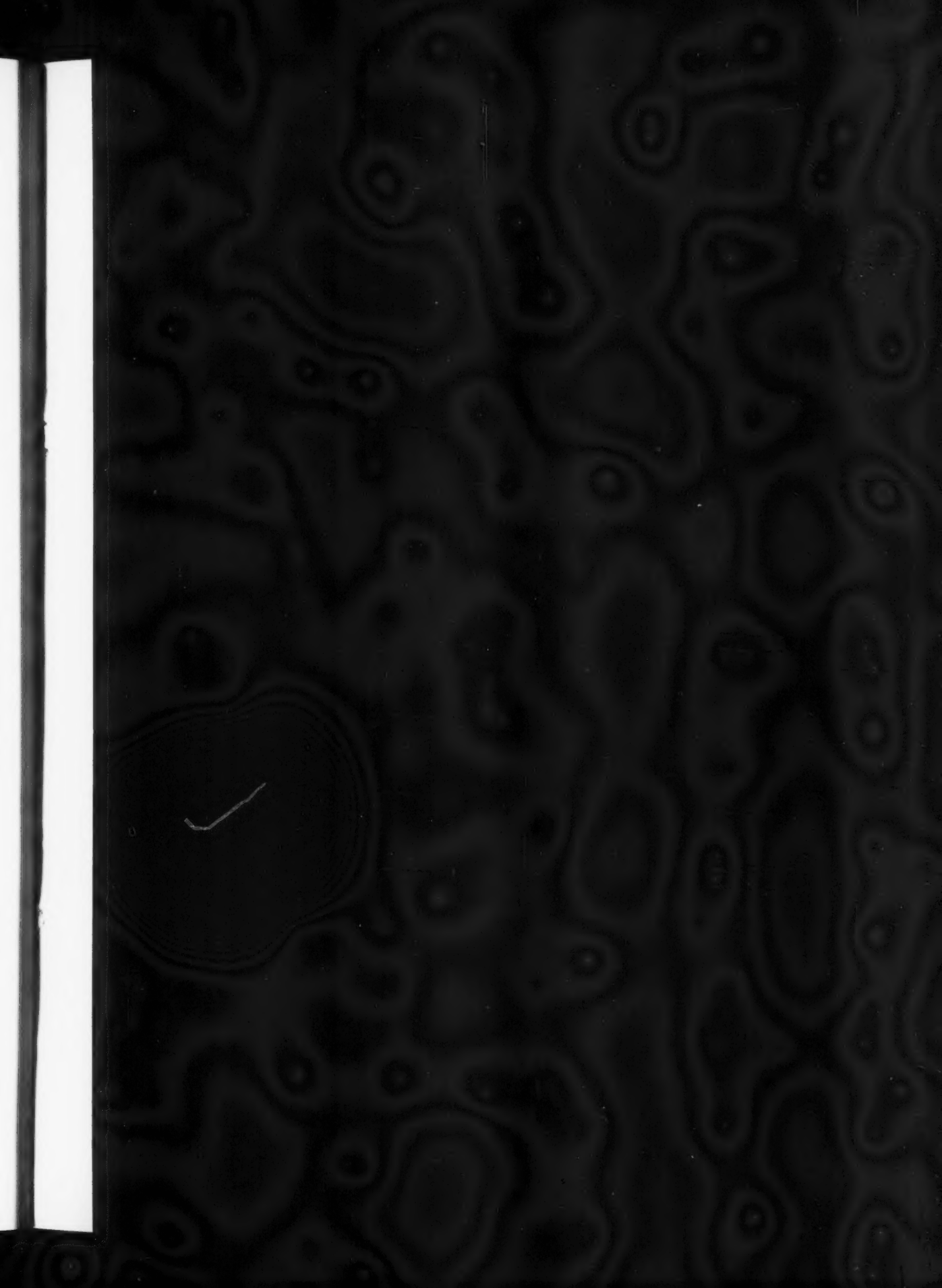
With cylinders made from either the best English tinned iron or best Lake Superior sheet copper, fitted with our

Patent Spiral Scoops

Bleaching Kiers with Patent Circulators

FOR

Raw Stock, Yarn, Woven and Knit Goods



Bleaching, Drying, Dyeing

and

Finishing Machinery

For Textile Fabrics

Bleach House
Machinery of All Kinds

Drying Machines
(Copper and Tinned Steel Cylinders)

Singeing Machines
(Oil and Gas)

Color Kettles
with Stirrers

Open Soaping
Machines

Calenders
For all Purposes

Mercerizing Ranges
(Piece and Warp)

High Speed Tentering Machines
for elastic finish with Automatic Clamps

Return Tentering Machines
for Woolen Goods

Hydraulic Presses

Dye House
Machinery of All Kinds

We are also sole Licensees and Makers in the United States for Daniel Foxwell & Sons, Manchester, England, of the

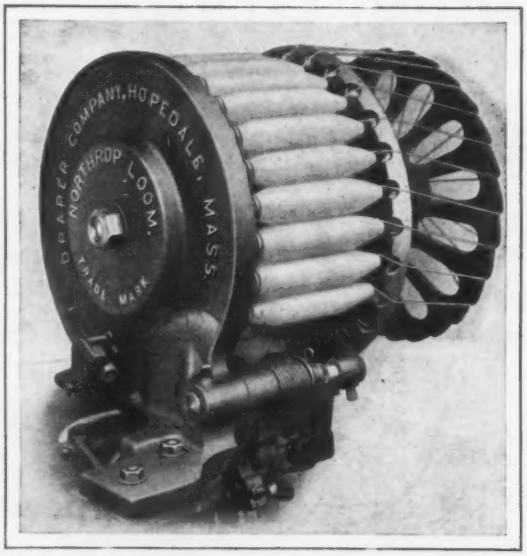
KAY & FOXWELL'S Patent Pneumatic Guider and Feeder

Simpson Patent Cloth Winder, No Stopping to Change Rolls, — Increased Production

H. W. Butterworth & Sons Co.

Providence Office
1212 TURKS HEAD BUILDING

PHILADELPHIA, PA.



NORTHROP LOOMS

TRADE MARK REGISTERED

Increase product per loom
Increase wages per weaver
Reduce cost of weaving per yard
Pay 20 per cent. or more on the investment

CAN YOU AFFORD

to Do Without Them?

DRAPER COMPANY

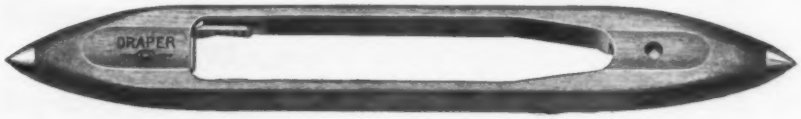
HOPEDALE MASS.

THE BEST

NORTHROP
Trade Mark Registered
LOOM
BOBBINS
AND
SHUTTLES

ARE MADE BY

Northrop Loom Manufacturers

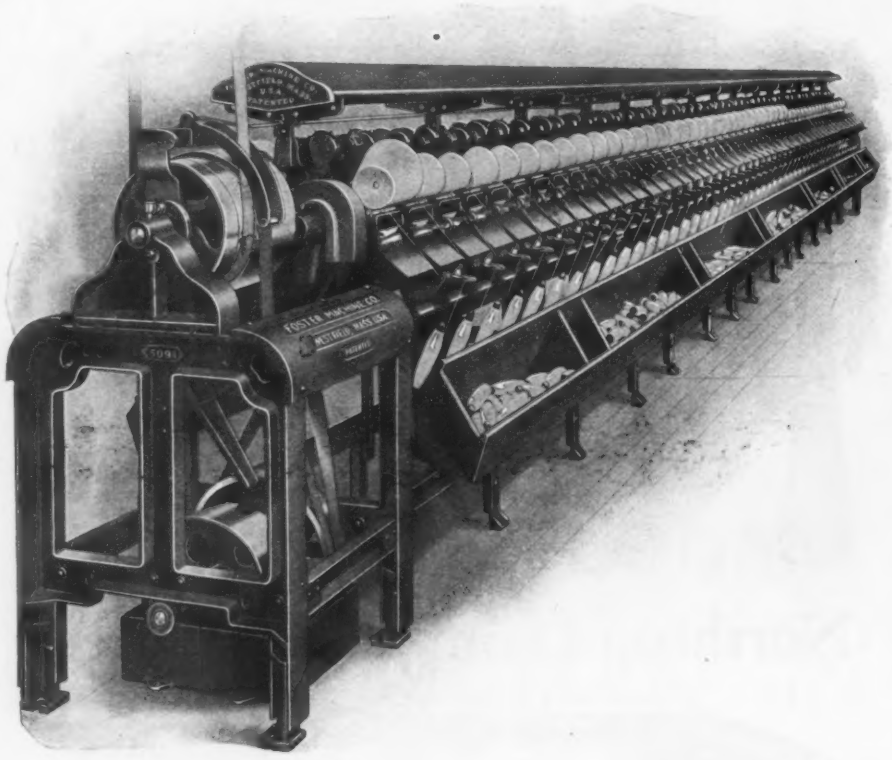


Look for our name on your Bobbins and Shuttles

Draper Company
HOPEDALE MASS.

J. D. CLOUDMAN Southern Agent 188 So. Forsyth St. Atlanta Ga.

The Foster Model 30



The Model 30 Cone Winder has every good principle of former Models incorporated in it. In addition, the new Model is more flexible of adjustment and may be set to produce finished cones of much greater taper than former Models, although paper cones of the same or lesser pitch are used.

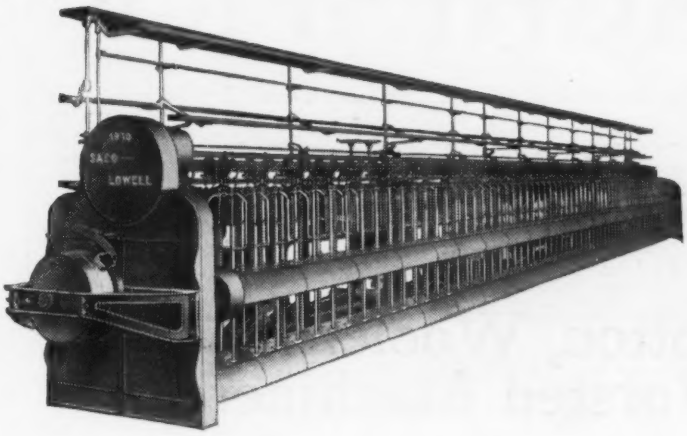
Foster Machine Company

Westfield, Massachusetts

JOHN HILL, Southern Agent, 1014 Healey Bldg., Atlanta, Ga.

Saco-Lowell Shops

TEXTILE MACHINERY



Shops—
Lowell, Mass.
Biddeford, Maine
Newton Upper Falls, Mass.

Executive Offices—
77 Franklin Street
Boston, Mass.

Southern Agent, ROGERS W. DAVIS,
Charlotte, N. C.

COMPLETE COTTON MILL EQUIPMENT
Including:
Pickers
Cards
Drawing
Evener Drawing
Roving
Spinning
Twisters
Slashers
Spoolers
Reels
Winders
Warpers
Looms

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WORSTED MACHINERY
Including:
Revolving Creels,
Gill Boxes
Drawing Frames,
Reducing and Roving Frames,
Cap Ring and Flyer Spinning and Twisting Frames
Jack Spoolers

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Long Distance Telephone—
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Cable Address—
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TEXTILE MACHINERY

Sole Agents in the United States and Canada for

PLATT BROS. & CO., Ltd.

OF OLDHAM, ENGLAND

By far the Largest Makers in the World of

Cotton, Woolen and Worsted Machinery

Also Sole Agents in U. S. and Canada for

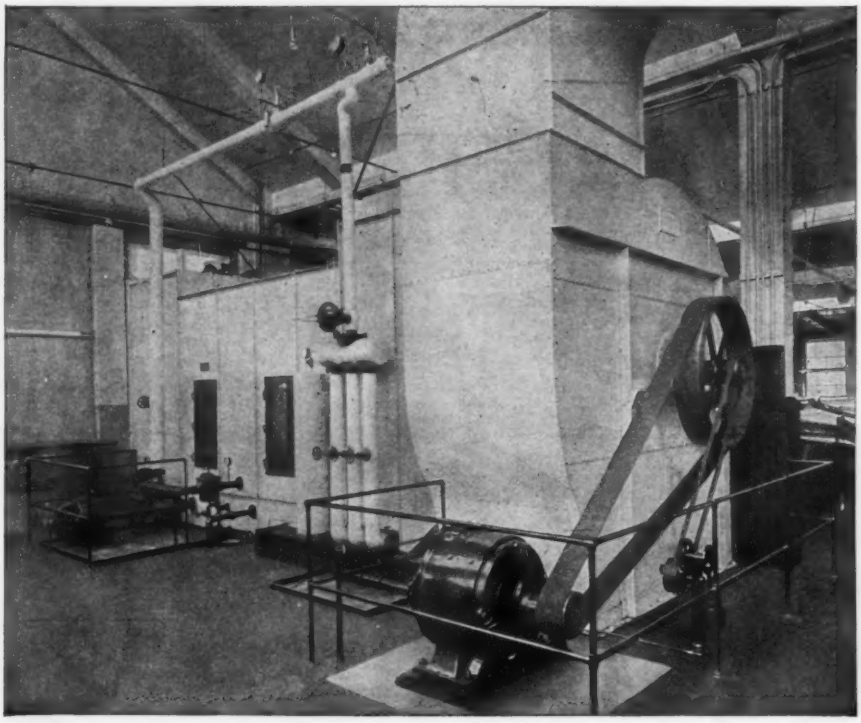
MATHER & PLATT, Ltd.

Equipment of Complete Works for

BLEACHING, CALICO PRINTING, DYEING AND FINISHING

Patent Mechanical FILTERS for Town Supplies and all Industrial Purposes

Wool Washing and Drying Machines, Napping Machines, Sykes' Card Clothing for Cotton, Critchley's Card Clothing for Woolen and Worsted, Wilson Bros'. Bobbins, etc., Harding's Pins, Fallers and Circles, Dronsfield's Grinding Machinery and Emery Fillet; Double Loop Bands, Scroll Banding etc.; Condenser and Gill Box Aprons, etc.



There is this much about it—when a textile plant is

"Carrier Equipped"

there is no reason in the world why it can't compete with any other plant, anywhere, on any grade of yarn or fabric. Have you seen our catalog? It's free.

Carrier Air Conditioning Co.

Of America

No. 39 Cortlandt Street, New York City

NEW ENGLAND
176 Federal St.
Boston

CHICAGO
Ft. Dearborn Bldg.,
Clark and Monroe Streets

PHILADELPHIA
734 Real Estate Trust Building

BUFFALO, 490 Broadway

COTTON MILL MACHINERY

Carding Spinning

MASON MACHINE WORKS

Drawing Weaving

Executive Office, 77 Franklin Street, Boston, Mass.

Southern Office, Greenville, S. C., Edwin Howard

Works at Taunton, Mass.

The cream of the textile industry use "Barreled Sunlight" in their plants

Test it out yourself under our Guarantee

YOU can easily prove to yourself that Rice's Gloss Mill-White will give 19% to 36% more daylight; will save you money, in making repainting less frequent; will not crack or scale; and will be more sanitary.

Apply Rice's in a section of your plant, where a fair comparison can be made with the interior finish you now use.

It stays white longest

RICE'S Gloss Mill-White is the original "mill white." All others are imitations. It is the *only* mill white which contains no varnish. For that reason we *guarantee* that if Rice's does not remain white longer than any other gloss paint—applied at the same time and under the same conditions - *we will give free enough Rice's to repaint the job with one coat.* We also guarantee that, properly applied, Rice's will not flake or scale. You cannot lose under this guarantee.

By the "Rice Method" it can be applied over old cold water paint

Hundreds of factories where cold-water paint was formerly used have thus been treated with Rice's Mill White and the flaking and scaling nuisance permanently obviated. Not only has a durable surface thus been produced, but a tile-like smooth finish which can be kept clean and which also reflects light and WILL NOT SCALE.

Write for booklet "The Yellow Peril" and sample board.

On concrete surfaces

On inside concrete, Rice's Granolith makes the best possible primer for a second coat of Rice's Gloss Mill-White—giving a tile-like enamel finish at no more expense than lead and oil paint.

Rice's Granolith

RICE'S GLOSS MILL-WHITE

U. S. GUTTA PERCHA PAINT CO.
20 Dudley Street, Providence, R. I.

Sold Direct—
Write for Booklet and Sample Board

Sold direct from our factory in barrels containing sufficient paint to cover 20,000 square feet—one coat.

Parks' Piping Parables

Just Because the "Peak Load" of your factory heating is passed and you are now getting along comfortably, don't forget those days during the "peak load" season when the heating was a real load and a real expense.

The Usual Method of neglecting these things until Fall, when there are more contracts than men, is not profitable.

If a more Economical Method of mill warming or a decrease in operating expenses interests you, we cannot urge too strongly getting at it now.

By so doing, you reap the benefit of off-season prices.

If you desire to look into the Parko System of Hot Water Heating let us hear from you—next mail will be none too soon.

Horse Power—and Man Power.

If you were able to hire Chinese coolies at ten cents a day—as they do in China to treadmill the river boats—you would have a horse power cost of about $2000.00 per year.

This is roughly eight to ten times what you pay.

The coolie at ten cents a day wears himself out in five to seven years. Your man, with power supplied him is good for fifty years of manual work.

America's labor is the highest priced in the world—and the best because we are beginning to see that when he is not made a "treadmill" he has a chance to develop his think factory.

I'm not in sympathy with any scheme of education that seeks to make of man or woman a human treadmill, nor yet am I in sympathy with one which educates us away from work—the kind we do with our hands.

But realizing that human horse power at ten cents a day is the highest priced horsepower, then in America the highest priced commodity is time.

And whoever stands in the way of a rational time saving operation—is pursuing as safe an operation as monkeying with a buzz saw.

Last week our sales department got a job for $2000.00 in competition with a price of about one-half.

Robbers—you say. So did the customer. Said he didn't object to paying us a little profit, but a price of one hundred per cent more than another reputable concern was going some.

Said the sales department. "Do you think a net profit of ten per cent, unfair?" "No"—said the customer. "Well"—said the sales department, "We figured a net profit of ten per cent, so it isn't a case of robbing you. The work as we have figured it cannot be done and done honestly for less money.

Said the customer—"What am I to do—the job was shown you both and I assume you are both figuring alike."

"Have you compared the specifications?" asked our sales department.

"Yes"—said the troubled one—"and they both look alike to me."

"Tell you what," said our sales department—"You read the other fellow's specifications out loud. I'll follow along with mine point by point and show you the difference. If I can't you can call me a robber then."

'Twas done so. And the two jobs were as unlike as the difference in price suggested.

In fact we figured we saved the customer $1000.00 by getting him to spend $2000.00. For the competitive layout—it was a coal saving job—would have been no improvement over his present conditions. The money paid for it would have been thrown away.

I mention this in passing because I believe it to be a fairly well grounded axiom that we get about what we pay for in shoes, shirts, shawls or socks.

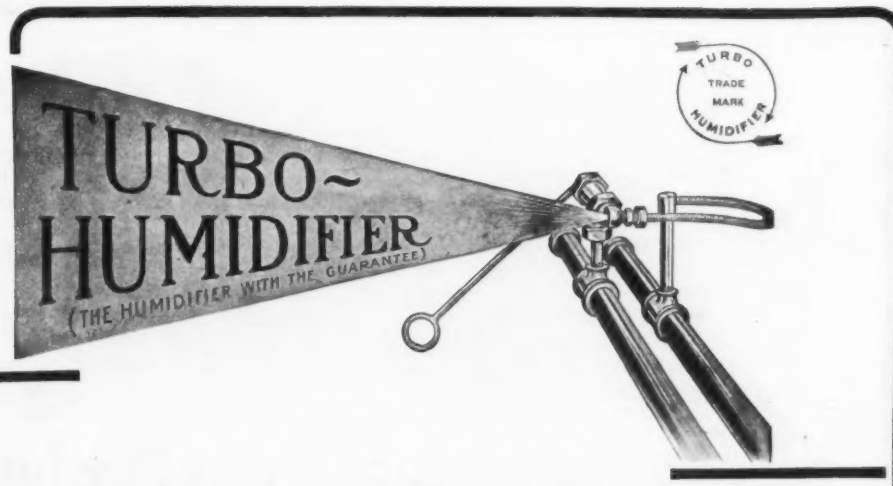
The same psychology will apply to piping—whether you trade in Fitchburg or not. For it is not my desire to assert that all the virtue in the piping business centers in and about this burg.

The only difference being that that which is done here I happen to know most about—and I don't like to talk about something which I don't know about.

This is why I talk about ourselves. The acquaintance, while perhaps not improving with long standing, has the advantage of being intimate.

PARKO.

The G. M. Parks Company, Fitchburg, Massachusetts



The Turbo-Humidifier is Economical

Originally the Turbo was designed to work at 65 pounds air pressure, it being the thought that with this pressure a very convenient accessory could be given the textile manufacturer—enabling him to use compressed air tools in repair work.

The textile trade didn't seem to care for this especially—and since the sharp shooters said that the Turbo took too much power, we redesigned the head to work at 30 pounds air pressure.

POWER CUT IN HALF

Now our yearly mechanical power is no more than any system of humidifiers; but in addition you have at your disposal the accessory of compressed air cleaning, which some say is worth as much as the humidifiers themselves.

LESS MAN-POWER

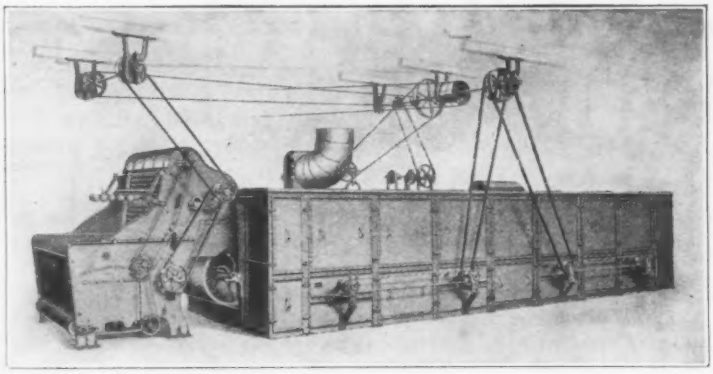
But listen to this:

"We have your favor of May 7th, and beg to state in regard to Turbo-Humidifiers, that we have not had one cent repairs on the system since same was installed several years ago. We did not keep any record of the oil and water which is used on the system, and neither did we keep a record of the time of the man looking after the air compressor and cleaning the humidifiers, but we know that he spends less time looking after the system than he does washing his hands, or cleaning up during working time."

The G. M. Parks Company

Fitchburg, Mass.

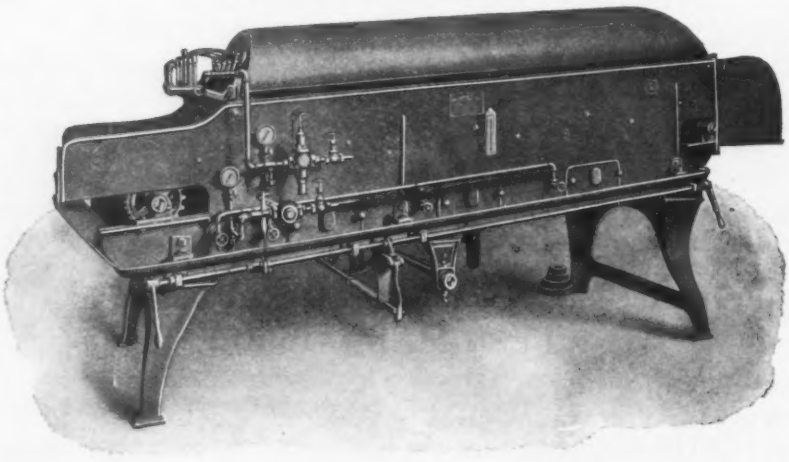
Southern Office, 200 Commercial Bank Building, Charlotte, N. C. **J. S. COTHRAN, Mgr.**



Sargent Automatic Drying Machines

For Drying Wool, Cotton, Hair, Silk, Flax

Containing exclusive features which permit greatest economy in operation. Ball Bearing Fans. Improved principle air circulation. Specially designed Feeders Automatic Apron Adjusting Device



The Yarn Conditioning Machine

The most effective and systematic method of setting twist
Eliminates Kinky Yarn difficulties

Wool Washers, Wool Dusters and Openers
Burr Pickers, Automatic Feeds for Cotton and Wool
Complete Carbonizing Plants

C. G. Sargent's Sons Corp., Graniteville, Mass.

Be Your Own "Efficiency Expert"!

The Textile Manufacturer does not need to pay any "efficiency expert" to learn the "efficiency methods" for one expensive operation in textile manufacturing — the movement of goods from upper to lower floors.

You can acquire authoritative and exhaustive information of these efficiency methods by yourself and without cost. The methods saving hours of time and labor and hundreds of dollars every year for hundreds of manufacturers are all clearly described and illustrated in this new beok, "Otis Gravity Spiral Conveyors." The coupon below brings you a free copy of this Book.

Suppose you could save all the expense and most of the time of the daily moving of supplies, unfinished and finished goods from upper to lower floors and levels. Isn't that the kind of efficiency you want in your plant? Wouldn't it be about the biggest saving you ever have made or ever could make? To know whether you can make this saving you have only to read this Book with its comprehensive but compact information on Gravity Spiral Conveyors and their employment in almost every kind of plant.

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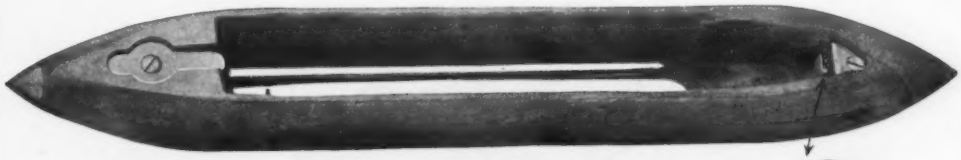
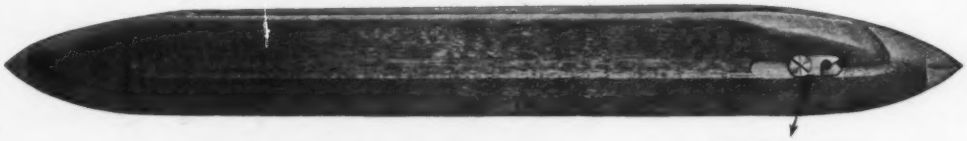
KETTLES
SOAPING
MACHINES
BELT DRIVE
ROPE DRIVE
JAMES HUNTER MACHINE CO.
NORTH ADAMS, MASS., U. S. A.

New Hand-Threading Shuttle

The Caron Patent Hand Threader



This "THROAT PLATE" (slightly enlarged) is so designed that the Yarn *cannot "Balloon"*



This "SIDE EYE" (slightly enlarged), made in two parts, *prevents unthreading.*

The Simplest and Most Quickly Threaded Shuttle Made

It can be filled with the finest silk or the coarsest filling—will neither *unthread* nor "*balloon*"—lint that accumulates is easily removed—felt can be inserted for tension purposes—and being a hand-threading shuttle, it is sanitary.

This shuttle is entirely different from all others. It has been severely tested for a year by large mills and is the most effective hand threader on the market.

Trial orders solicited—Satisfaction guaranteed

Paper Cop Tubes Cones and Shells

Send your samples and we will quote prices on any lot desired

Shuttles and Shuttle Irons

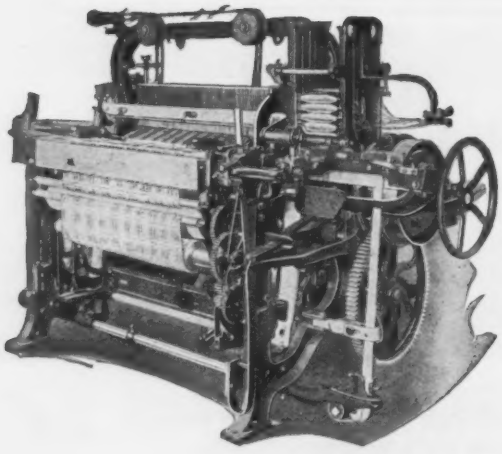
For All Textile Purposes

American Textile Specialty Machinery Co.

670 Eddy Street - Providence, R. I.

13th St. and Boulevard, Long Island City

Crompton & Knowles Loom Works



Automatic Gingham Looms

One of our latest productions for weaving goods of two or more colors in the filling. Like every loom we build, it has the advantage of a successful mill test.

WORCESTER, MASS.

Providence, R. I. **Philadelphia, Pa.**

Southern representative, ALEXANDER & GARSED, Charlotte, N. C.

ECONOMY AND SAFETY

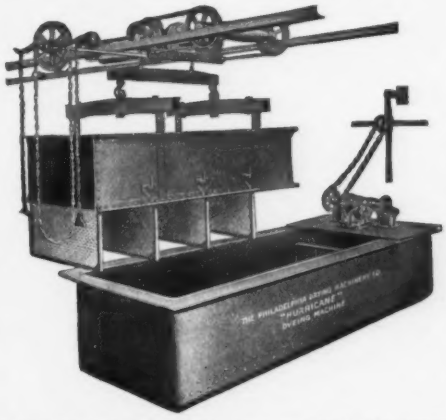
YOU GET BOTH WITH

"Hurricane" Machinery

FOR

HOSIERY
SKEIN
YARN
SLUBBING
etc.

The best and mosteconomical Dyeing Machines

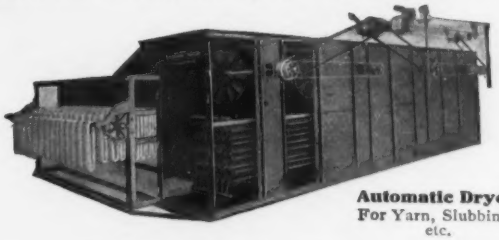


BETTER DYEING at LESS EXPENSE

—

Give us an opportunity to prove our claims

"Hurricane" Circulating Dyeing Machines are built in various sizes and types



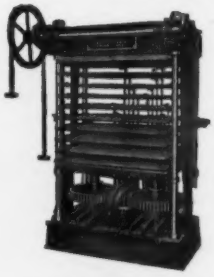
Automatic Dryer
For Yarn, Slubbing, etc.

Complete Equipments for

Dyeing
Scouring
Bleaching
Carbonizing

FIRE-PROOF DRYERS

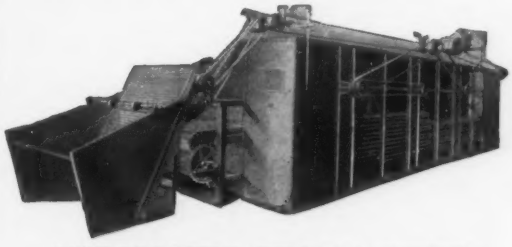
STEEL CONSTRUCTION
INSULATED WITH ASBESTOS



Power-Screw and Hydraulic
PRESSES

Fans

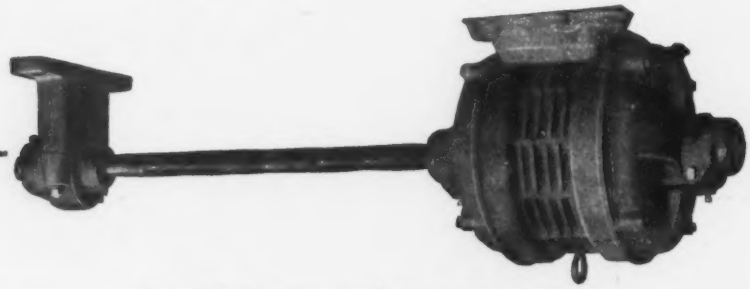
Motor and Belt Driven



AUTOMATIC STOCK DRYER
(With Sectional-Continuous Conveyor)
For Cotton, Wool, Hair, Rags, etc.

THE PHILADELPHIA DRYING MACHINERY CO.

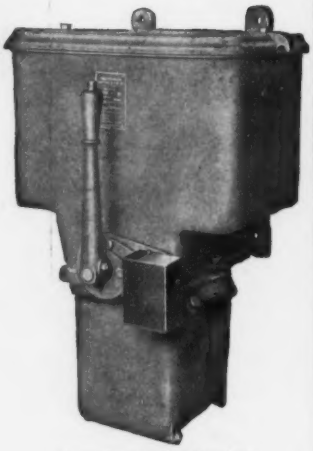
Main Office and Works: 6721 Germantown Ave., Phila., Pa. **Boston Office: 53 State Street**



Type CS Four-Frame Motor for Spinning Frames

Westinghouse Textile Motors and Control

Weatherproof Starter for Conduit Wiring with low voltage and overload protection



Auto-Starter for Conduit Wiring

The Naumkeag Steam Cotton Company,

the largest cotton mill in New England buying Central Station Power have purchased about 4000 horsepower of CS Motors with starting devices arranged for conduit wiring.

Westinghouse Electric CS Motors Win Again!

Textile Quarterly No. 9 tells the story of CS Motors, send for a copy

Westinghouse Electric & Manufacturing Co.

EAST PITTSBURGH, PA.

BOSTON
Boston Safe Deposit and Trust Building

NEW YORK
165 Broadway

PHILADELPHIA
North American Building

CHARLOTTE
American Building

ATLANTA: Candler Building

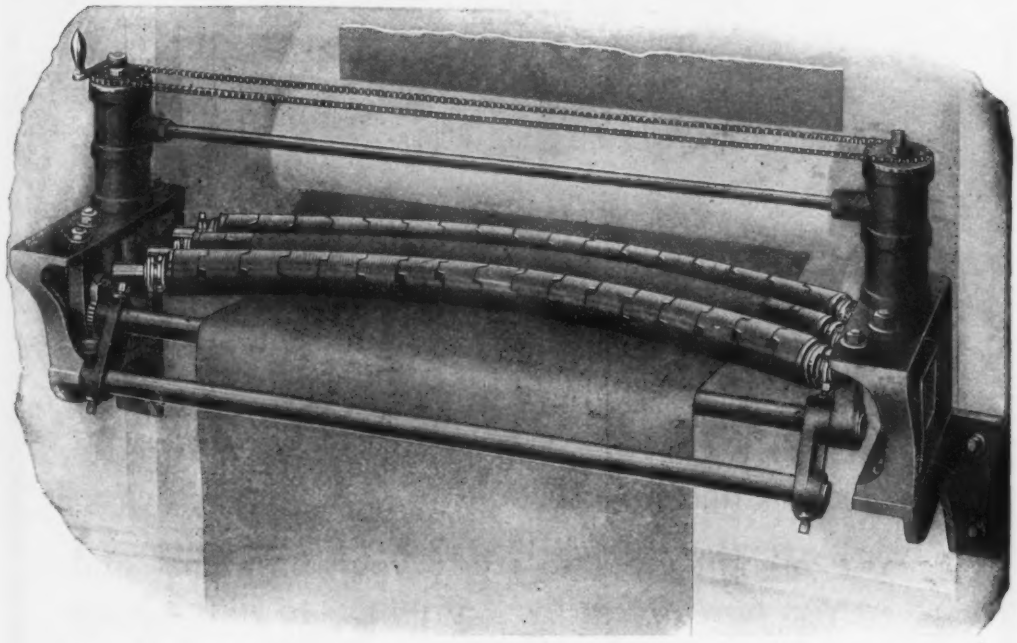
THOMAS LEYLAND & COMPANY

F. T. Walsh, Manager

60 India Street, Boston, Mass. WORKS AT READVILLE, MASS.

Sole Manufacturers of THE WILLIAM MYCOCK

Improved Regulating Cloth Expander



Expander attached to Calender showing Regulating Motion and Adjustable Tension Bars

This Expander and its improved features are fully protected by basic United States patents, and by others still pending, under which the builders will maintain their patent rights against any who may violate such rights by building, selling or using machines of this character.

We solicit correspondence from those having new ideas for Calico Printing, Dyeing, or Bleaching Machinery, either patented, or capable of being patented, and which they wish developed or manufactured.

Scutchers, Sewing Machines, Open Bleaching Machines, Blanket Washers for Calico Printers, Guides, Etc.

Starch

TEXTILE STARCHES

THICK BOILING STARCH. We manufacture several brands of thick boiling starches adapted to the various requirements of manufacture.

THIN BOILING STARCH Penetrates the warp, adding weight and increasing the strength. We manufacture thin boiling starch for sizing and finishing in varying degrees of fluidity according to the requirements of manufacture.

DEXTRINE. We manufacture all grades of dextrine and British gum.

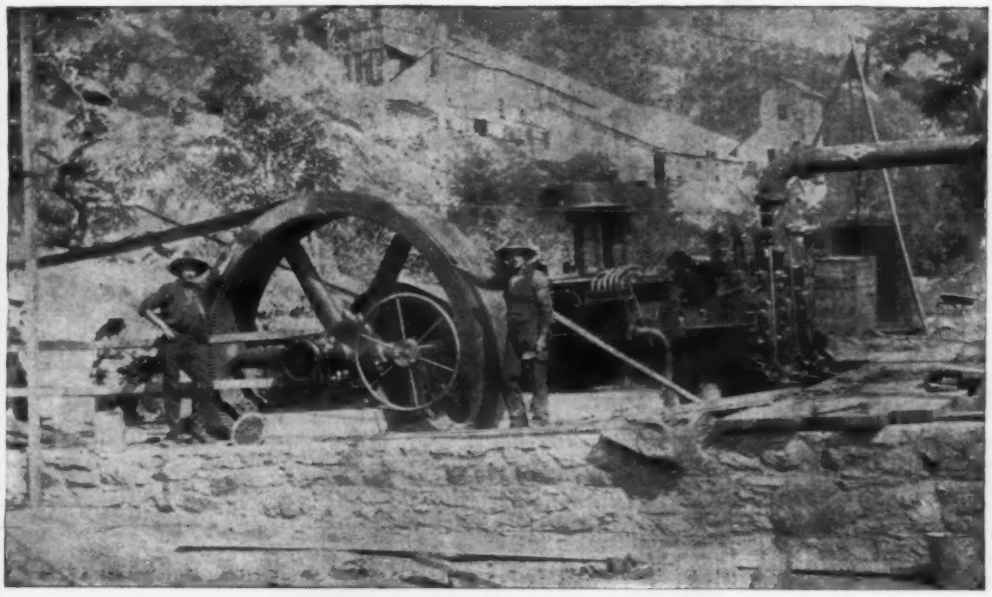
We are prepared to study your problems and show you how to use these products to your advantage and increase the efficiency of your process.

For full information address

Corn Products Refining Company

17 Battery Place, New York, N. Y.

Starch



They often run things in the open in South Africa

Here's a Premier Gas Engine with a Duxbak Belt exposed to the elements all the year round. Parching dry weather is more trying to belts in South Africa than moisture. Schieren's Duxbak Waterproof Leather Belting is the sunproof as well as waterproof belting. Indoors or outside conditions of any kind are all the same to Duxbak.

DUXBAK BELTING TRADE MARK

Chas. A. Schieren Company ESTABLISHED 1868

Tanners

Belt Manufacturers

OAK LEATHER TANNERIES • BRISTOL, TENN,

New York - 21 Ferry Street

BOSTON: 641 and 643 Atlantic Ave., opp. So. Station
PHILADELPHIA: 226 No. Third Street
SEATTLE, Wash.: 620 Fourth Avenue
CHICAGO: 128 W. Kinzie St.
DENVER: 1752 Arapahoe St.
PITTSBURGH: 337 Second Ave.
PETERSBURG, Va.: 122 Shore Street
NEW ORLEANS: 402 Canal Street

The Texas Chas. A. Schieren Co., Inc., 106 South Market Street, DALLAS, TEXAS.

DUXBAK

The Belt of Universal Use

WATSON, LAIDLAW & CO. LD.

DUNDAS ST. SOUTH, GLASGOW

PATENT WATER-DRIVEN

HYDRO-EXTRACTOR

Underdriven Baskets

24 in. Diameter to 48 in.

Suspended Baskets

24 in. Diameter to 84 in.

Retain the benefit of self-balancing with entire absence of belts and gearing. No working parts requiring lubrication except spindle, which only requires a little grease once or twice a year. Can be placed anywhere regardless of power or moisture.

ABSOLUTELY SAFE

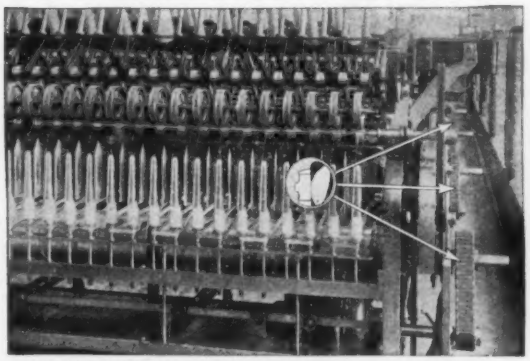
CALL OR ADDRESS

W. J. WAYTE, INCORPORATED

ONE LIBERTY STREET, NEW YORK

Pacific Coast Agents, BOURRET-KIRKWOOD COMPANY, Seattle, Wash.

MORSE Silent Chains



7½ HP. MORSE Chain drives from G.E. Motors to Spinning Frames in the Arlington Mills

For Driving Textile Machines

POSITIVE speed ratio between driving and driven shafts insures maximum production; 98½ to 99% sustained efficiency prevents gradual dropping off in production; quietness leaves employees minds free for devotion to work; convenience of application minimizes installation difficulties; reliability and long life with low up-keep cost are the other economical features.

Specification

MORSE Silent Chains are *not* a stock proposition. Each drive is designed to meet its specific requirements and conditions. Horsepower to be transmitted, R.P.M. of shafts, center distances, etc., all have a bearing on the design and are carefully considered by our engineers. After you have become convinced of the superiority of MORSE Silent Chains because of the exclusive "Rocker-Joint" construction, write our nearest office, giving the simple mechanical details of your problem, (specification blanks furnished free on request) and our engineers will *design* a drive to satisfactorily and economically meet your requirements.

There is no guess work, no duplication of drives to save cost and time, no "this-ought-to-do-him" policy. Our engineers weigh each condition of service and then *know* what you need and what to give you. Your problems are safe in our hands whether you want one drive or one thousand, for ¼ HP or for 5000 HP. For better power transmission get in touch with our nearest office without delay.

Morse Chain Company, Ithaca, N. Y.

NEW YORK, 50 Church Street
BOSTON, 141 Milk Street
ATLANTA, Earl F. Scott, M. E.
702 Candler Bldg.

I would like to receive literature descriptive of MORSE Silent Chains and information regarding their advantages in connection with.....
.....
Name.....
Company.....
Address.....M-102

FIG 20.
Extra heavy, best quality cotton duck. Leather binding.

THERE IS A

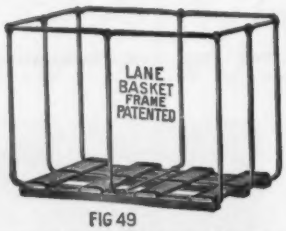


FIG 49
Lane indestructible frame with renewable hard wood shoes. Made also with iron shoes.

LANE BASKET

OR

TRUCK

FOR YOUR ESPECIAL USE

WRITE FOR CATALOG

MANUFACTURED BY

FIG 22.
Round taper style. For bobbins, waste, etc.

W. T. LANE & BRO.

POUGHKEEPSIE

N. Y.

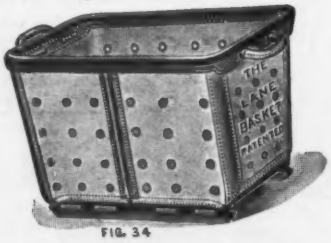
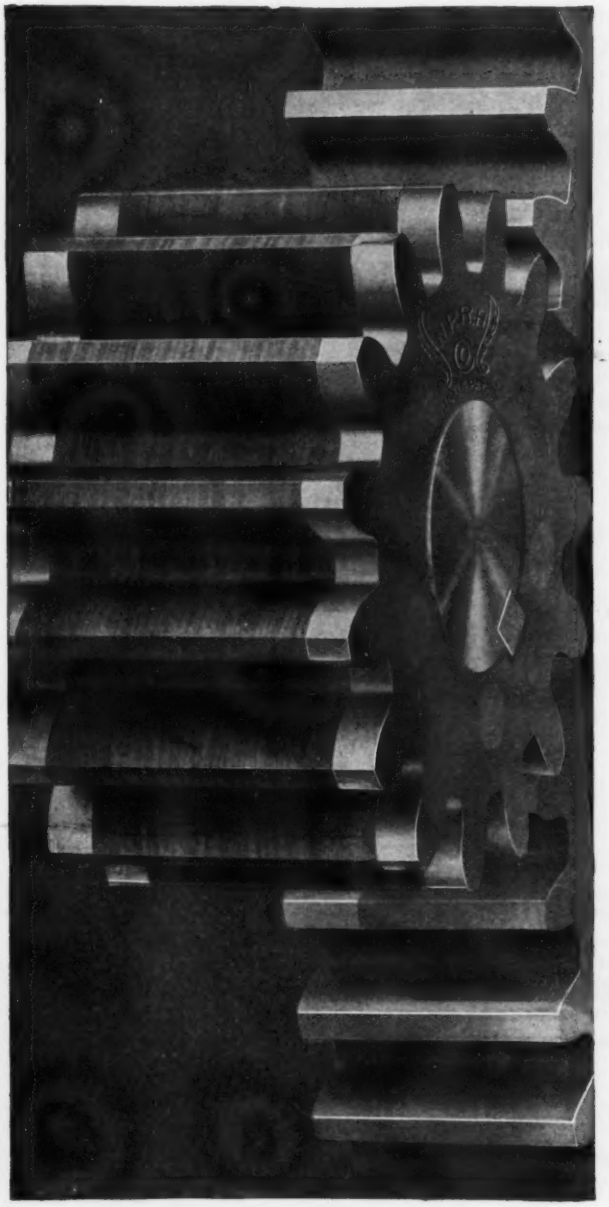


FIG. 34
The Lane Basket is a long-lived, quick steamer.

New Process Noiseless Pinions



are durable, strong and quiet. Their use on high speed drives reduces vibration and helps men to do their best work.

Send for booklet:
"Noiseless Gear Driving"

N.P.R.H.
Reg. U.S. Pat. Off.

NEW PROCESS IS TO ALL OTHER RAWHIDE AS STEEL IS TO IRON

NEW PROCESS GEAR CORPORATION
SYRACUSE, N. Y.

CANADIAN AGENTS: ROBERT GARDNER & SON, LTD, MONTREAL

106

A Service that Serves

Rock Hill, S. C., April 16th, 1915.

Steel Heddle Mfg. Co.,
Philadelphia, Pa.

Dear Sirs:-

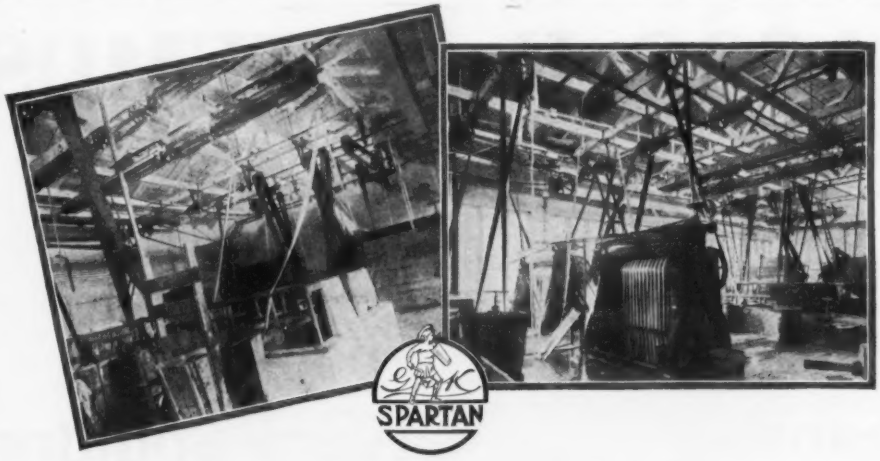
We have had one fourth of our Mill equipped with your flat steel heddles for nearly one year. We get just as many yards of 80 x 80 print cloth from the steel heddles as we do from the twine harness and make fewer yards of seconds. I consider it the best harness we can buy. We have just placed the order for the full 560-sets.

Yours truly,
Aragon Cotton Mills,
P. B. Parks, Supt.

This Mill has been giving our new double bar Harness frame equipped with Duplex Heddles as per illustration above, a thorough trial on *Print Cloth* where heretofore no other Harness but the "Cotton" could be used successfully. Since this new invention has been placed on the market a great number of Manufacturers have realized the marvelous benefit and have followed the trail of others. We have numerous very large contracts for full equipments of Mills with this type Harness, which is sufficient proof that the problem for Print Cloth goods to be run on flat steel heddles *only* is thoroughly solved. If you want to save money, write to us today.

Steel Heddle Manufacturing Company

21st and Allegheny Ave., Philadelphia, Pa.
Providence Office - - - 76 Dorrance St., Providence, R. I.



WHERE THE SERVICE IS HARD

SPARTAN BELTING

PROVES ITS TRUE WORTH AND EFFICIENCY

That is why this $3000 Spartan equipment has given such universal satisfaction in a large Georgia bleachery. The Superintendent writes:

> "We find they stand steam, acid and water just as represented. In regard to pliability and friction, would state that they are the best we have ever used and have not called for any belt dressing of any description. These are the first belts we ever used that we did not have to take up or cut."

Even stronger evidence of the service rendered by Spartan Belting in this bleachery lies in the fact that we have recently furnished this Superintendent another Spartan equipment for a large new mill.

The use of Spartan in your mill is a guarantee to you of the same degree of satisfactory service. In your Bleachery, Dye House, Singeing Room, in fact in any place where conditions are unusual install Spartan, it will mean top-notch efficiency—first, last, and always.

Our Engineering Department is thoroughly equipped to give expert assistance and advice upon any transmission problem and to investigate and design any drive upon request. May we serve you?

THE GRATON & KNIGHT MFG. CO.

Oak Leather Tanners and Belt Makers **Worcester, Mass., U. S. A.**

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THE GRATON & KNIGHT MFG. CO., of Texas, Dallas, Texas

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JACOB K. ALTEMUS

Knows How To Build

Winding **Spooling**

Beaming **Warp Splitting**

AND

Warping Machinery

THAT WILL GIVE THE BEST RESULTS

This knowledge, combined with practical and successful experience in the operation of this machinery makes it easy for him **to show you how to save money.**

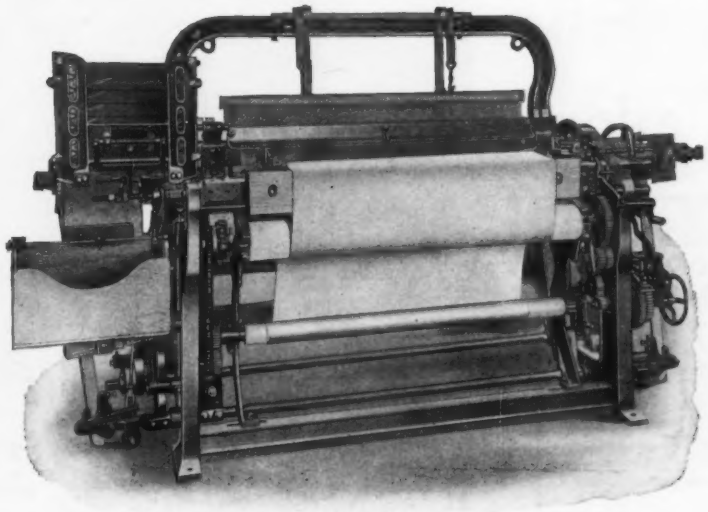
Do not fail to inquire about the **New Cone Winding Machine** that winds all kinds of yarn from the skein.

Write to

JACOB K. ALTEMUS

Textile Machinery

2824 North Fourth Street - Philadelphia, Pa.



1915 MODEL PLAIN GOODS LOOM

1915 Model Plain Goods Loom
the Last Word in Loom Construction

It produces strictly high-grade cloth
Practically no seconds or waste

20-30 Looms per Weaver
50-60 per cent. Saving in Weaving Costs
and yet Weavers can Earn 40-50 per cent. more wages

Catalogue sent upon request

The Stafford Company

Readville, Mass.

FRED H. WHITE, Southern Agent, Charlotte, N. C.

TO YOU —WHETHER YOU ARE A MANUFACTURER, ADVERTISING MAN, SALES MANAGER, EDITOR OR PUBLISHER — AN INVITATION IS GIVEN TO ATTEND

The 10th Annual Convention of the Federation of Trade Press Associations

The Bellevue-Stratford Hotel

Philadelphia

September 7-8-9, 1915

THE FEDERATION OF TRADE PRESS ASSOCIATIONS

— comprises 250 leading trade and technical journals.

— exists for the purpose of developing and encouraging higher and still higher ethical standards in publishing, advertising and general business practice.

— represents over $40,000,000 invested capital.

— reaches through its constituent publication millions of business men!

— includes in its membership publishers expending over $37,000,000 in salaries and wages.

— desires the individual interest and co-operation of every reader and advertiser.

— wants YOU to attend its annual gathering.

EVERY man engaged in producing, advertising or selling merchandise will find much of interest and help at the Annual Trade Press Convention.

WHETHER you come to give of your own experience and observation; to gather the ideas of others or to exchange yours for theirs — this convention will give you big returns on your investment of time.

THE influence of these conventions is assuredly a potent factor in meeting the need of the day for greater economy in production and distribution of both necessities and luxuries.

A GATHERING of hundreds of leaders in the great economic movement toward increased efficiency in the manufacture, sale and distribution of merchandise is bound to be productive of great good and helpfulness. *You should be there.*

For additional information write the Editor of this Journal, or

Bartley J. Doyle, Chairman Committee on Arrangements

512 Race Street, Philadelphia

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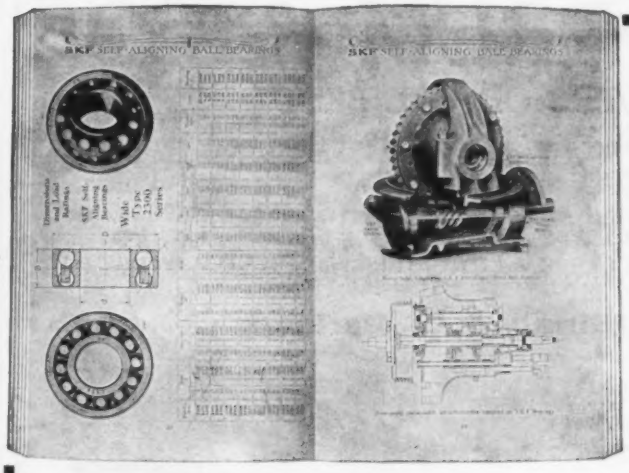


These New Books Will Help You Obtain

More Production For Less Money

FOR USERS AND MANUFACTURERS OF

COTTON PICKERS AND WINDERS
RAG AND SHODDY PICKERS
GARNETTS
TWISTING FRAMES
DRYERS
NAPPERS, ETC.

IN this day of efficiency, when severe competition requires machines to operate at their highest point of speed, much attention is necessarily given to any means that will bring about this result.

Special "Textile Bulletin No. 14-M, General Catalog No. 40—and

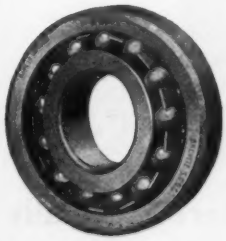
SKF SELF ALIGNING BALL BEARINGS

in Machine Tools and Shop Equipment," are especially valuable to Mill Superintendents, Engineers and Users of Textile Machinery.

Data showing actual tests; how ball bearings when applied to machines have produced a remarkable saving of power, is carefully explained.

Every progressive Engineer, Purchasing Agent and Textile Manufacturer should have copies of these books for his files. All copies will be sent if desired.

Ring for your stenographer and tell her to write us today—NOW.



Deflected View

SKF BALL BEARING CO.

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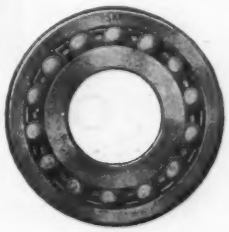

Full View

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"BUILDERS OF THE BEST"

Labor Saving Machinery for Dyeing, Singeing and Finishing

HOSIERY

IN SULPHUR, ANILINE, DEVELOPED BLACKS AND COLORS
POWER SCREW PRESSES and MERCERIZING MACHINES

SAVE LABOR and **DYE STUFF** and do **BETTER WORK**
in your dye house by using

Smith, Drum & Co. Machines

Full particulars on application

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Philadelphia,
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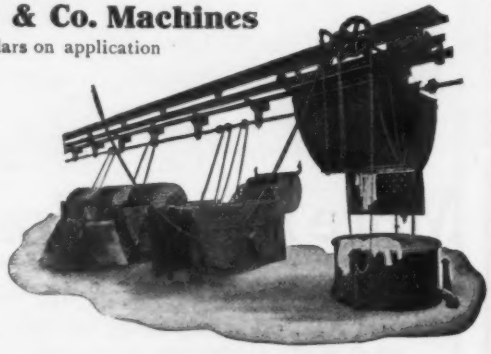

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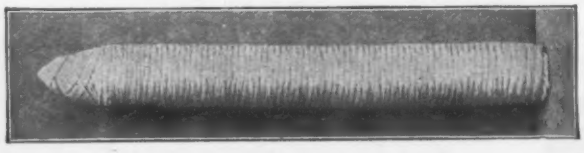
H. G. MAYER
Realty Bldg.,
CHARLOTTE, N. C.

Cops to weave from inside seven-eighths to three inches in diameter and up to seventeen inches long suitable for various kinds of coarse goods such as grass matting, cocoa bagging, cocoa matting, all kinds of carpets, felts, chinchilla, linen, jute, flax, asbestos, hose and narrow fabrics, such as wicks, belting, webbing, surcingles, halters, etc.



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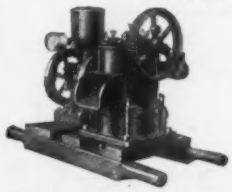
If You Have a Pumping Problem to Solve

You Will Want a Copy of This Book

It gives general instructions and the various tables needed in selecting a pumping equipment for any service in Textile Mills.

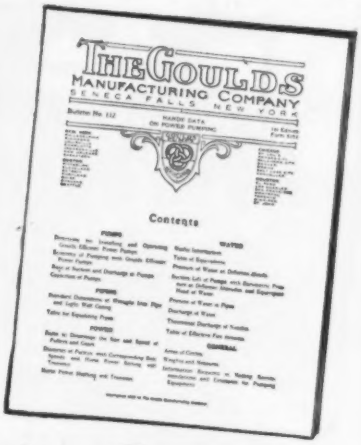
Our local representative will also be glad to call and assist you with any engineering help you may require on pumps or pumping.

Drop us a card and we shall be glad to send you a free copy of the book.



Goulds Power Diaphragm Pump

Ask for
Bulletin No. 112
"Handy Data on
Power Pumping"



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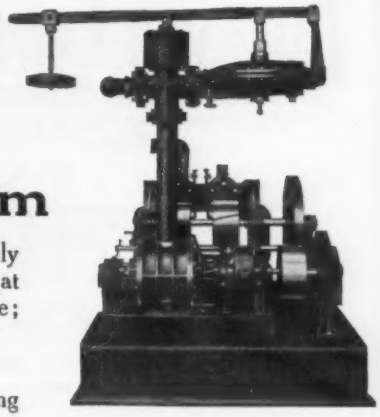
Best Singeing at the Least Cost

The Capacity of Your Gassing Machines may be Increased from 25% to 100% by Means of the

Kemp Automatic Gas System



employing ordinary city gas. This device is easily installed and delivers gas and air under pressure at absolutely correct mixture; produces a clean blue flame; singes thoroughly and uniformly.

It is equally effective for heating calenders.

Flame burns in confined space; is self-sustaining and combustion perfect.

Results Guaranteed
Furnished on Approval

THE C. M. KEMP MFG. CO.
405-413 E. OLIVER STREET
BALTIMORE, MD.

This mixture is regulated at machine instead of burners.

Mills use the KEMP AUTOMATIC GAS SYSTEM, making a big saving in gas consumption.

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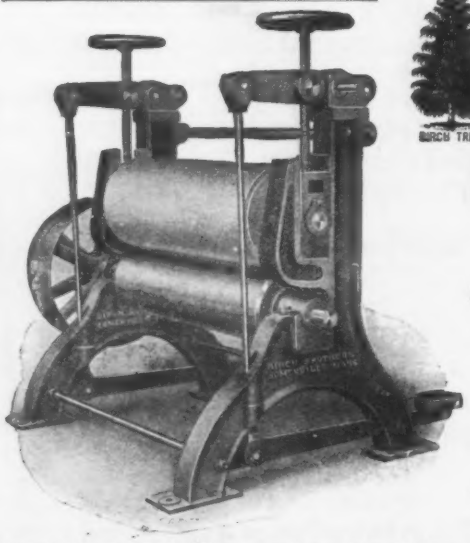
ALBERT BIRCH, TEXTILE MECHANICIAN

SOMERVILLE, MASS.



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"Coronation"
Piece-End
Sewing Machine

Sent on trial most anywhere

Sews any fabric, thick or thin, wet or dry, without change

Fine Stitch or Coarse Stitch

Send for Circular

Also Makers of

Dyeing and Finishing Machinery

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FAIRBAIRN LAWSON COMBE BARBOUR LTD.

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MAKERS OF MACHINERY FOR PREPARING AND SPINNING FLAX, HEMP, TOW AND JUTE,

AND ALL

MACHINERY for the MANUFACTURE of TWINES and ROPE YARNS.

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For Spinning Cops on the Bare Spindle.

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EVERY product sold under this emblem is backed by J-M Responsibility—a new order of service pledged by a nation-wide organization that has had over half a century of experience in solving ***your*** *problems. J-M Products are made not merely to sell but to give satisfaction in use. Hundreds of J-M Service Representatives everywhere give this assurance. That's J-M Responsibility.*

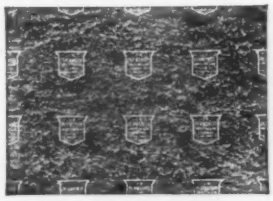
Many of those who order this sheet packing speak highly of it — but they all reorder it

J-M Permanite Packing. The packing that has won its way on performance. This is why J-M Permanite is a handy sheet because it is equally efficient on wet or dry joints. It has no respect for temperature or pressure, nor is it affected by ammonia, acids or alkali.

Then, too, it stays where it's put. It does not compress under any stress, in fact, it expands under working conditions, making tight joints tighter.

J-M Permanite is very light in weight.

When the J-M Salesman suggests J-M Permanite say "I'll try it once." We are willing to let it convince you.



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New York and every large city

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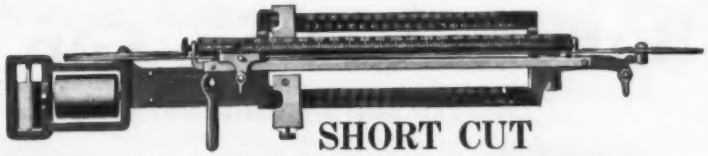

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To the 100% EFFICIENCY mark in your COUNTING, WEIGHING, TRUCKING and HANDLING

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The PROBLEM solved WASTES eliminated

Highest degree of ECONOMY secured

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ALL accomplished by the use of NATIONAL SYSTEM of handling your product.

YOU should be in a position to derive the benefit other manufacturers obtain from

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Ask for our NEW catalogue just issued

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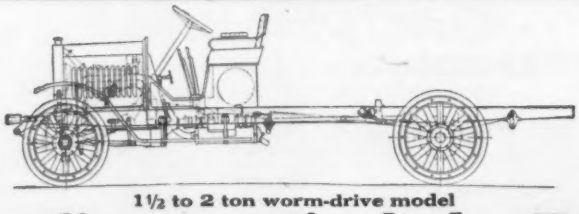


1½ to 2 ton worm-drive model

The new line now includes 7 models

1000 lbs. to six tons—$950 to $4350

AFTER a careful and scientific study into all phases of haulage requirements, we announce an increase in our line to 7 models—ranging from a 1000 lb. delivery body to a 6-ton truck. The new line of KisselKar Trucks is designed to supply most economical delivery under every haulage condition which may arise.

KISSELKAR TRUCKS

SEVEN GREAT MODELS

Here is the new line and chassis prices:—

1000 lb. delivery	$ 950
¾ to 1 ton truck	1500
1 to 1½ ton truck	1750
1½ to 2 ton tru k	2100
2½ to 3 ton truck	2750
3½ to 4 ton truck	3350
6 ton truck	4350

The specifications and details of this wonderful range of trucks are so important that it is impossible in this announcement to more than ask that those interested write at once for complete literature.

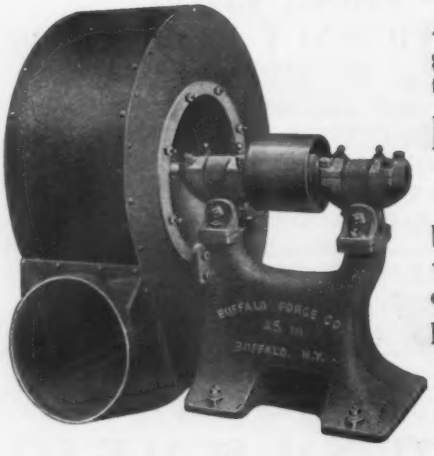
For Your Business Learn in detail the construction of these great trucks — **both worm and chain drive models** — and their adaptability to your peculiar problem. They are the most modern trucks on the market.

Kissel Motor Car Company, 528 Kissel Ave., Hartford, Wis.

New York, Boston, Chicago, Philadelphia, St. Louis, Milwaukee, Minneapolis, St. Paul, Dallas, San Francisco, Los Angeles, Omaha, Oakland, Cleveland, Detroit, Toledo, Columbus, Rochester, Buffalo, Baltimore, Pittsburgh, Duluth, Seattle, New Orleans, Troy, Nashville, Hartford, Conn.; New Haven, Norfolk, Providence, Marshalltown, Ia.; Madison, Montreal, Toronto, Calgary, Victoria and three hundred other principal points in the United States and Canada.

Buffalo Cotton Gin Fans

Built to suit installation conditions



Advise us your requirements and our engineering department will recommend a fan that will give you

Highest Efficiency

Lowest Power Bills

because it will be especially adapted for your work. Having various types we are not compelled to offer one to meet all conditions.

Let us send you Catalogue 256-74.

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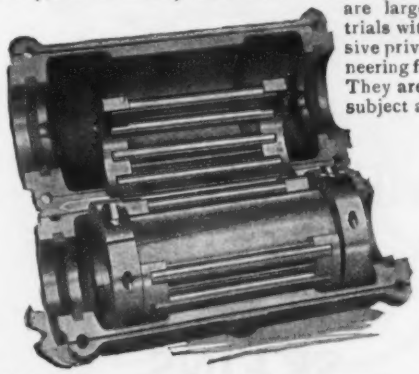
Buffalo, N. Y.

Manufacturers of Forges, Blowers, Drills, Heating, Ventilating and Drying Apparatus

Bethlehem Steel and Standard Oil

are mere examples out of the long list of shrewd buyers who endorse "Sells" Roller Bearings by purchasing them in large numbers.

Many of the concerns which are using "Sells" Bearings today, and which buy *more* "Sells" when they need them, are large industrials with extensive private engineering facilities. They are able to subject anything they buy to exhaustive engineering and economic tests. Better than any arguments that I can advance, don't these continued purchases by an ever-increasing number of such big concerns, justify any power-user in considering "Sells" Roller Bearings with a great deal of confidence?



This time is particularly opportune for investigating "Sells" Roller Bearings, because they reduce production cost under the present difficult conditions, and through the savings in power for which they are well known, will make possible increased production, with larger profits, when the eventual return to "good" business occurs.

John D. Sells

Manager

Royersford Foundry & Machine Co.

56 North Fifth Street, Philadelphia

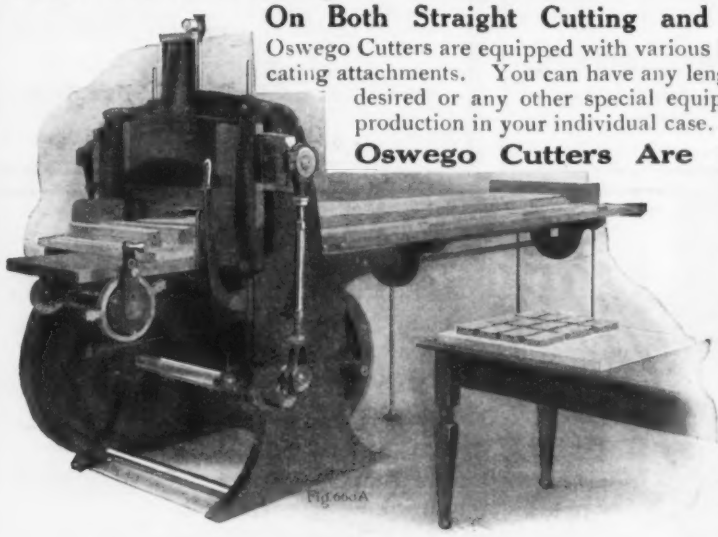
Babbitted Ring Oiling Bearings—Shaft Hangers, Collars and Couplings—Punches and Dies—Punching and Shearing Machines—Sensitive Drill Presses—Foot Presses—Grinding and Polishing Machines—Tumbling Barrels—"Rollerine," the ball and roller bearing lubricant.

"Sells" Roller Bearings

The New Oswego Autos Save Time and Cloth

On Both Straight Cutting and Pinking Samples

Oswego Cutters are equipped with various back gauge size duplicating attachments. You can have any length of iron-backed table desired or any other special equipment needed for rapid production in your individual case.



Oswego Cutters Are 100% Efficient

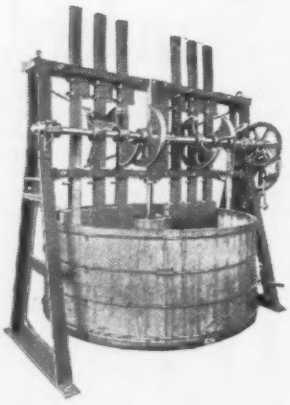
They eliminate waste of material, time and power. There is no tearing at the folds. They cut easily and quickly — either vertical or shear stroke.

Oswego Cutters are made in 90 sizes and styles for cutting Cloth, Paper, Board, Foil, Celluloid, Leather, Rubber, Cork, etc.

Special sizes and styles made to order.

OSWEGO MACHINE WORKS

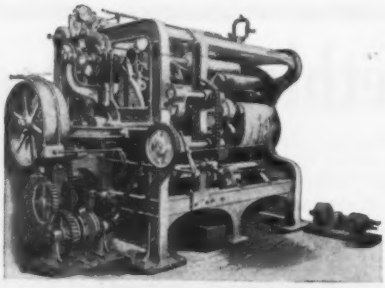
NIEL GRAY, Jr., Proprietor Write for Circular 660 **OSWEGO, NEW YORK, U. S. A.**



Multiple Action Tom-Tom

Positively uniform treatment,
Goods easily accessible,
No dragging of the goods,
No clatter of Wheels or Gearing,
No banging of Tappets on Hammers,
Available area for goods in one washing, 31 sq. feet,

RODNEY HUNT MACHINE CO.
Main Office and Works, Orange, Mass.
Boston Office, 70 Kilby St.



Buhlmann's
MERCERIZING MACHINE
for
SKEINS

Unsurpassed in quantity and quality of output and economical working

A. W. BUHLMANN
Textile Engineer

200 Fifth Ave. New York

RELIANCE CLOTH HANGING MACHINE

For shrinking woolen, worsted and cotton goods; drying oilcloth, or waterproof cloth, and curing rubberized cloth.

Can be attached to any machine or operated separately

In use by the United States Quartermaster department for shrinking uniform cloth.

Write for catalogue and prices

Reliance Machine Works
Frankford, Phila.

One of the Reasons Why—

The photograph shows our Type "E" Textile Extractor, and a detailed view of the self-oiling step box which is used in all our standard type centrifugals.

It is **one** of the small but important reasons why there are now more than 2300 S. & U. Centrifugals in service; just one of their many advantages.

SCHAUM & UHLINGER
Centrifugals

The shaft revolves in a phosphor bronze bushing, and is tipped with a hardened tool steel toe. This toe revolves on a phosphor bronze step plate, which rests on another step plate of hardened tool steel. The oil circulates freely and automatically lubricates the bearing.

This and all the other S. & U. advantages are described in our free book "Centrifugal Extraction."

Have you a copy? If not, write us today, also asking for any special information you wish. No obligation, of course.

Schaum & Uhlinger, Inc.

Glenwood Ave. and Second St.
PHILADELPHIA ∴ ∴ PA.

The Hamilton Oak Leather Company

Hamilton, Ohio.

I. B. Williams & Sons, Dover, N. H.

Gentlemen: In reply to your inquiry in regard to the 6 inch Double Shedite Belt we purchased from you some two or three years ago, will say that this belt has been in constant service where it has been subjected to very hard wear and continuously running in what we might say a very damp atmosphere, being in our tanning department. It has given us exceptionally good wear and has outlasted all the other belts that we have had in this department. We might say that we have had four other different makes of so-called waterproof leather belt in competition with this belt and all of the others have failed to meet with the conditions that the Shedite has successfully withstood. We can truthfully say that this belt is the very best that has come under our observation and when we are again in need of belting we will be very glad to give you the preference.

P. M. HOOVEN,
Secretary and Treasurer.

Shedite Leather Belting

This is a belting that possesses all the superior qualities of our famous "*Cocheco Belting*," and in addition is *absolutely steam proof and water proof.* No matter what conditions of dampness prevail, "Shedite" gives perfect service.

For over 70 years we have been making the best belting on the market.

Every sale is made under a guarantee of "MONEY-BACK-IF-NOT-AS-REPRESENTED."

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DOVER, N. H.

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Portland, Maine.

I. B. Williams & Sons, Dover, N. H.

Gentlemen: I have been using your belting for a number of years and I find it the best belting that I ever had in a laundry. We use it mostly in the wash room on the extractor and washing machines, which is a difficult place for a piece of belting to do work and last any length of time. I think of one belt, about twenty-six feet long, that is running on the extractor; it has been there over four years and is practically none the worse for wear. This is one of the hardest tests that a belt can be put to on account of the different temperatures that it is subject to and the steam and water continually coming in contact with it.

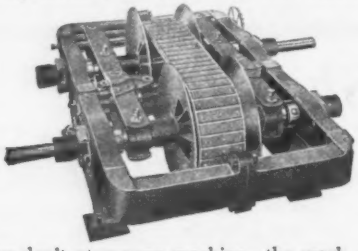
R. D. LIBBY, Proprietor.

There's No Guesswork About It

When you have

"The Reeves" Variable Speed Transmission

you turn a hand wheel and get precisely the speed you need on your Tentering Machine, Dryers, Printing Machine, Mangle or any other machine.



You don't stop your machine—the work continues right along and when you get the speed that gives best results, stop turning the hand wheel.

Turn to the right to increase the speed—to the left to decrease.

Simple, isn't it?

Its simplicity and ease of operation are what has made it so popular and profitable to hundreds of Textile mills.

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Reeves Pulley Co., - Columbus, Ind.

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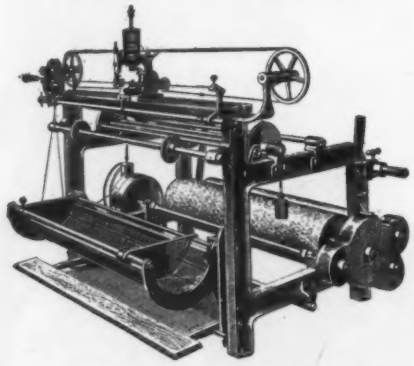
Here is a Machine That Can Unwind, Sew and Rewind Cloth Into Rolls of 3000 Yards or Less.



No. 4 OPENING AND WINDING RAILWAY SEWING MACHINE.

(Equipped with Singer Head.)

Why do nearly all the leading cotton mills in this country use this machine?

Because no other puts the cloth into such perfect condition, clean, free from wrinkles, smoothly wound into hard, straight rolls, ready for the shears, brushing machine or for shipment to the bleachery.

From 500 to 600 pieces of cloth can be handled by it every day—although the machine requires only 5 feet of floor space.

Measuring attachment and inspecting board furnished if desired.

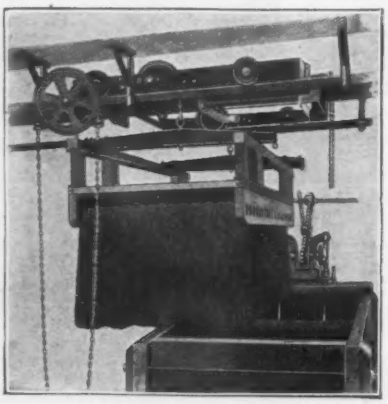
This machine can be equipped with either the Dinsmore or the Singer type of sewing head.

Send for catalog of other Dinsmore mill sewing machines.

Dinsmore Manufacturing Co.

SALEM, MASS., U. S. A.

Labor cost less than half of other methods



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Yarn, Braid and Tape Bleached separately or simultaneously

Once loaded, the bleaching, washing, soaping, blueing and finishing are completed without rehandling.

Our method of transferring the batch from one to another machine is possible with no other system of bleaching.

All metal parts, except the propeller, are securely wood encased.

If you have doubts our references will remove them.

Skeins of any and all lengths treated at the same time.

Hussong Dyeing Machine Company

Groveville, N. J.

Also Manufacturers of the Uniform Hosiery Dyeing and Bleaching and Warp Dyeing Machines

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Giles
TRADE MARK

If You are Interested in

Machines for
Dyeing or Bleaching Yarns

Cotton
Wool
Worsted
Silk
Artificial Silk
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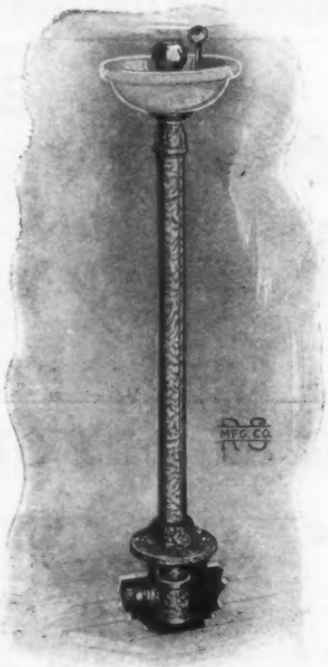
Write us to send you an estimate of cost of installing an equipment as well as the economies in labor and steam that can be made.

John H. Giles Dyeing Machine Co.

TAUNTON, MASS.

ECONOMY



This is one of our many inexpensive bubblers. Your people are in better condition, when properly refreshed, to give their best effort, so from a selfish as well as from a humanitarian standpoint, they should be furnished with modern, sanitary drinking fountains which will minimize sickness and time spent in using the old methods.

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"MADE IN THE U. S. A."

and every day it is more and more extensively used "in the U. S. A." for producing

zero NO HARDNESS water

Water as Soft as Rainwater
for all Textile Purposes

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Spontaneous Combustion

eliminated by the use of

Breton Oil for Wool

Wool oiled with "Breton" can be stored for months without loss or danger of spontaneous combustion. Cards and spins as well as the day it was oiled. The use of "Breton" oil insures fine, even perfect yarn.

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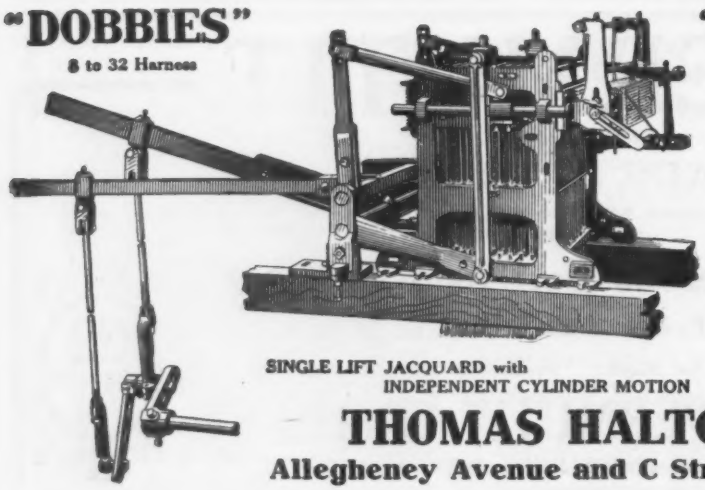

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"JACQUARDS"

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The Only Perfect System of Air Moistening

Has Been Adopted by the Representative Manufacturers of this Country.
The only System adopted in the Textile Schools. Write for booklet "T" on Humidification.
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Salem, Mass.

Elevators Especially Adapted for Textile Mills

Protect Yourself Against Liability Laws

We make a specialty of attaching to Elevators, already in use, Automatic Folding Hatch Doors, Semi and Full Automatic Gates, Automatic Locking and Stopping Devices, Automatic Car Safety Attachments, etc.

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American Vulcanized Fibre

Just the Extra Touches

in workmanship, quality of material and finish make the difference between the ordinary fibre can and the Laminar Fibre roving cans made by the American Vulcanized Fibre Co.

The wear is put in them when they're made, by such features as electrically welded tinned steel rims and wear-proof Laminar fibre. Made in all sizes, standard or special, to almost any specifications.

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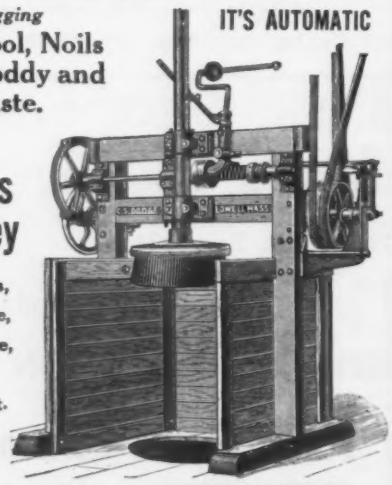
THE ORIGINAL TIME TRIED BAGGER

For Bagging
Wool, Noils Shoddy and Waste.

IT'S AUTOMATIC

It Saves Money

On Bags, Storage, Cartage, and Freight.



The C. S. Dodge Wool Bagging Machine

Makes bags of uniform weight. Automatically puts 20 to 40 lbs. more to the bag than by old methods. Put in on trial. Satisfaction guaranteed.

C. S. DODGE, - - LOWELL, MASS.
Pickers, Picker Pins. Cylinder Covering a Specialty.
"IF DODGE DOES IT—IT SATISFIES"

THE "No-Waste"
Seamless Hard Fibre Roving Can

It does not have the riveted seam that strains and breaks the sliver

NO SEAMS OR RIVETS

ABSOLUTELY SMOOTH

Also
Fibre and Steel Clad Cars
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Sheet Fibre Tubes
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Special Shapes

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install individual electric motor drive, an essential to profitable Textile manufacturing? WE HAVE THE MOTOR FOR THE WORK.

Write us for data

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MANUFACTURERS OF MOTORS, GENERATORS and TRANSFORMERS
Ampere, N. J.

TO GET BETTER WORK

Remove all impure air from your work rooms, replace it with good, pure oxygen laden atmosphere—in short—

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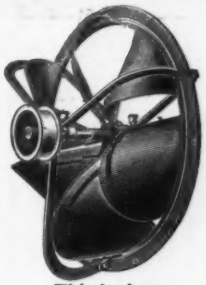
Fill your rooms with clean, vitalizing air. It will give energy and snap to your workmen. It will mean better work—and more of it. It pays!

For Drying and Ventilating Facts, Write To

A. HUN BERRY, 29-33 West First St., Boston



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BERRY WHEEL OR FAN
WITH NO BACK DRAUGHT
the most effective agent on the market for drying and for eliminating steam and other impurities from the air.

Tolhurst Self Balancing Extractors

Belt, Engine and Motor Driven

Sizes 12" to 72"

Dye Tubs and Tanks

Reel Dyeing and Bleaching Machines

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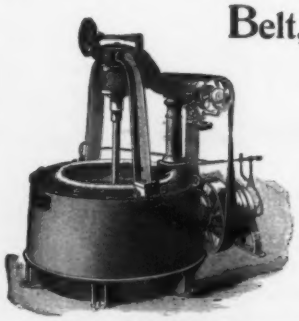
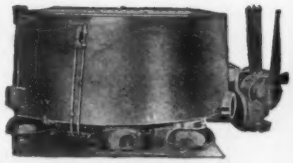


Over Driven Extractor



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TOLHURST MACHINE WORKS, Troy, N. Y.

FRED H. WHITE, Southern Representative, Realty Bldg., Charlotte, N. C.
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Requires Absolutely No Attention

If you are interested in an expansion joint for steam, water, or gas pipe lines, to stand any pressure whatever you should find out what a

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Self-Equalizing Expansion Joint

will do and save for you. It certainly will do away with packing or any leaking. Once in place you can forget it.

It is built on a correct idea, that of corrugations, each of which is compelled to take up its proper share of the expansion. For long service it can't be beaten.

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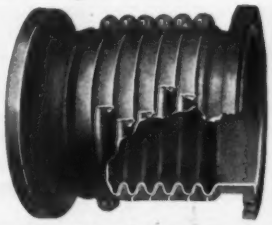

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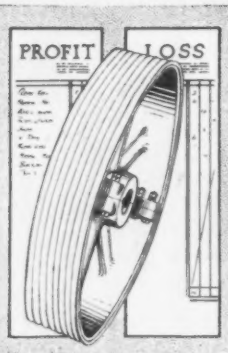

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Engineers know that FRASER means—Pulley efficiency, highest accuracy, enduring service, in fact, through and through, the demonstration of care and attention to those little things—those details so to speak that stand between profit and loss.

DOUGLAS FRASER & SONS, Limited
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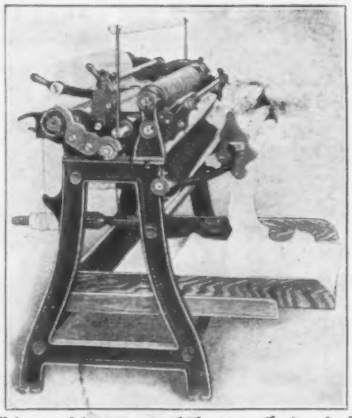
The Ireland Cloth Cutting Folding and Winding Machine

Cuts Cotton or Woolen Fabrics, Knit Goods, etc. for Bindings, Facings, Fronts, Button Stays, etc.
Straight or Bias



This machine saves 6% to 15% in cloth; 25% to 50% in labor over the old methods.
Ask us for particulars
The Ireland Machine & Foundry Co.
Norwich, N. Y.

Ball Warpers

The general arrangement of an Entwistle Ball Warper including Creel is similar to our Slasher Warper excepting that the yarn is wound in rope form on a wooden roll on the Balling Machine.

This machine will run 500 threads with drop wires in 2 rows, and 800 threads with drop wires in 3 rows.

The Entwistle Line
Includes:

Expansion Combs	Slasher Warpers
Balling Machines	Beaming Machines
Card Grinders	Doubling Machines
Creels	Leese Clocks

And all supplies needed in connection with **Warping Machinery.**

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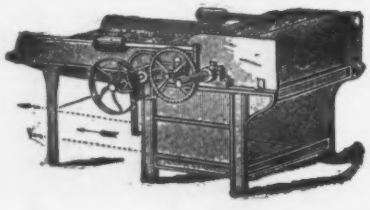

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Wool and Waste Dusters
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Improved Cloth Measuring Machines

Lumper and Duster Cylinders Refilled and Repaired

DON'T REHANDLE YOUR ASHES

Geco Steam Jet Ash Conveyors

are Dustless, Simple, Reliable, and Safe— No Moving Parts

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REVOLVATOR Reg U.S. Pat.Off.

For the

Rapid Cheap Safe

piling and unpiling of baled cotton, cotton cloth, waste or cased goods the Revolvator is the most efficient tool.

This picture shows how easily one man can hoist a 500-lb. bale of cotton. How do you pile?

Send for Illustrated Bulletin W-31
"The Revolvator in the Textile Industry"

N. Y. Revolving Portable Elevator Co.

349 Garfield Avenue, Jersey City, N. J.

After 37 Years Experience

THIRTY-SEVEN years of constant testing out on all kinds of belting service—that's what GANDY has had. And today it stands out greater and stronger, more supreme than ever—a long service belting at a low price.

For 37 years GANDY has been proving to an increasing number of users that it will do the work as well or better than either leather or rubber belting, at about one-third the cost of leather and for very much less than rubber belting.

GANDY STITCHED COTTON DUCK BELTING

You users who are asking for oil-proof, dust-proof, and virtually wear-proof service, can find it right in GANDY, and forget the rising costs of leather belting and rubber belting, just as thousands of others have done.

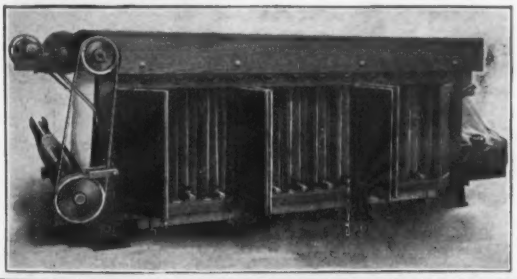
Try GANDY. It's worth your while. It gives maximum service and satisfaction.

The Gandy Belting Company

747 West Pratt Street Baltimore, Md.

New York Office, 36 Warren Street

Manufacturers Cooling AND Conditioning Machine



No finishing room should be without this machine. Indispensable for cooling cloth so as to permit of immediate inspection.

Finished cloth restored quickly to its **Natural Condition**

Manufacturers Machine Co.

Lawrence, Mass.

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AND WHY IT IS BEST IN

POWER, SPEED AND ECONOMY

The Leffel Wheel, now developed into the Improved Samson Turbine, will continue to maintain, as it has for the past 49 years, its superiority because of features that give it wonderful power and high velocity, economy in the use of water, and an unusual steadiness of motion under variable gateage.

These are points of merit established by scientific and experimental tests.

Send for catalog illustrating and describing the different types and proving their merit

The James Leffel & Co.

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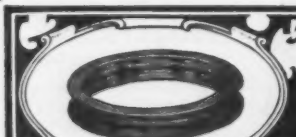

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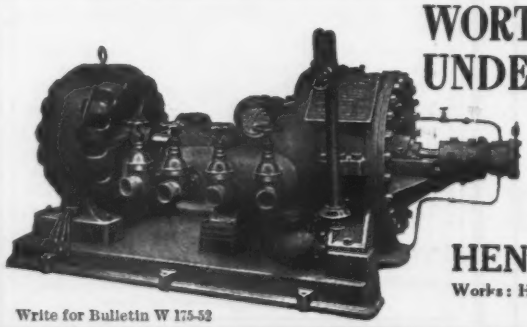

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TEXTILE WORLD RECORD

Published on the 12th of each month by

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Official American Textile Directory

Published annually, in two editions. Office, Large Size, **$3.00. Traveler's,** Flexible, Smaller, **$2.00**

A Complete Directory of Cotton, Woolen, Knitting, Silk, Flax and Jute mills of the United States and Canada, together with the Dyeing and Finishing Works, Bleacheries, Print Works and other Textile Establishments; about 7,000 in all. Full information is given about each mill in almost every instance, viz., the name of the company or firm, names of officers, agent, superintendent, the character of goods made, the machinery equipment, i. e.. the number of sets of cards (or combs), the number of spindles, number of looms; whether the mill uses steam or water power, whether there is a dye house or not, the names of the selling agents or if the mill sells direct. All this and much other information contained in this book is arranged in a way to be instantly accessible.

Vest Pocket Editions of the Directory are published in three sections, viz.; the New England States and Canada; Middle States; Southern and Western States. The price of these is **$1.00** per section.

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It contains **full reports of every knitting mill** in the United States and Canada, giving capitalization, names of the officers, including superintendent and buyer; kind of goods made; number of knitting machines, whether latch or spring needle; number of sewing machines; whether the mill dyes or bleaches or finishes; kind of power; number employed; selling agent; kind of yarn bought; lists of the jobbers, manufacturers' selling agents, commission merchants, department stores and large retailers handling knit goods and the name of the person in charge of the knit goods department. List of dyers, bleachers, finishers, printers, etc., making a specialty of knit goods work. Special copyrighted maps of the mill districts, showing the cities and towns where there are knitting mills. It is indexed so any town or mill may be quickly found.

THE KNIT GOODS TRADE. The Dry Goods Section of the American Directory of the Knitting Trade is also bound separately. It is pocket size, has flexible covers, and contains classified lists of manufacturers, manufacturers' selling agents, jobbers, department stores, large Retailers, and New York Buyers. Price **$1.00.**

Permanent Colors Create Permanent Trade

The insistent demand of the consumer for Fast Colors makes it imperative that the Retailer, the Jobber, the Cutter-up and Textile Manufacturers recognize the question, Fastness of Colors, as a most important one

Indigo The introduction of synthetic Indigo by the Badische Anilin-& Soda-Fabrik in 1897 greatly lowered its cost, simplified its application and placed it on a scientific basis. The immediate practical result has been that Indigo is used on an ever increasing scale in the production of overall goods (denims) for working garments worn by artisans of all classes everywhere, as well as for navy blues with white designs, in percales, and similar fabrics which are so largely used the world over for women's house and working dresses. Nothing has yet been found which is as well suited as Indigo for these and many other purposes, since it combines minimum cost, brilliancy of color and satisfactory fastness. In fact, the word "Indigo" to the consuming public is a guarantee of a durable and satisfactory color.

Indanthrenes Unfortunately, however, Indigo produces only a Blue, while the trade requires every shade in fast and brilliant colors. To Dr. Rene Bohn, Director ot the Badische Antlin-& Soda-Fabrik, Ludwigshafen a/Rhein, should be given credit for the discovery of the series of dyestuffs derived from Anthracene, known as Indanthrene Dyes, which produce fast colors in every desired shade and tone. The introduction of these dyes in the cotton industry has created a new standard for fastness and brilliancy, in which combined respects they excel any colors heretofore known. Indanthrenes are actually permanent while the fibre lasts, meeting therefore every trade requirement, a fact so well demonstrated that today the word "Indanthrene" (pronounced In-dan-threne) is synonymous with "Fast Colors." There is probably no factor of greater importance in the manufacture of cotton goods than the fastness of the colors, in that it constitutes a most attractive selling argument, increases their popularity, and broadens the market for them.

BADISCHE COMPANY

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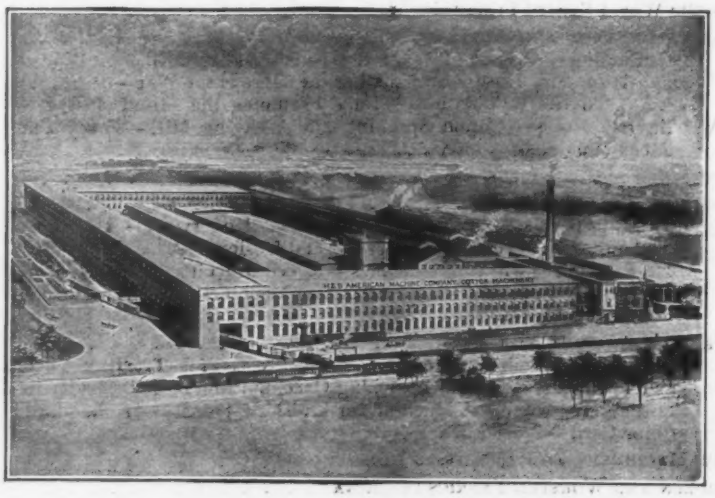
Correspondence

We solicit correspondence on textile subjects. Articles accepted will be paid for. Name and address must always be given, not necessarily for publication. Subscribers are invited to make free use of our Questions and Answers Department; correspondence is strictly confidential.

COTTON MACHINERY



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TEXTILE WORLD RECORD

JULY, 1915

Monthly Comment.

A Discovery in Textile Analysis

In the investigation of a subject nothing is more exhilarating than discovery. This in fact is what makes study of all kinds so attractive, the sensation of discovering what had previously been known to the student. At first the student ignores or is unconscious of the fact that all he is discovering or learning is known as well or better by others. As time passes, however, this fact becomes more prominent and there develops a desire not only to learn, but really to discover something not previously known to anyone. It is, however, doubtful whether the discovery of something hitherto unknown affords the experienced investigator more genuine pleasure than that which comes to the beginner who is learning what is so well known to others as to be commonplace. An example of this exhilaration was recently supplied by the textile analyst of the Bureau of Standards, who learned and thought he had discovered a new method of determining the take-up of yarn in weaving. The delight over this supposed discovery was such that the following official announcement was inserted in the Consular and Trade Reports issued by the Department of Commerce:

DETERMINATION OF CRIMP IN TIRE FABRICS

In testing tire fabrics the length of each warp and filling yarn used up in passing successively over and under other yarns is an important factor. This is called "crimp." As a satisfactory method has not existed for determining "crimp," the Bureau of Standards has undertaken to develop such a method. The one proposed, which promises success, consists in measuring a thread in cloth, removing, and again measuring under various tensions. The results enable the length of the yarn under no load to be computed and from this length and the length in the cloth the "crimp" may be computed.

What the Bureau of Standards very appropriately calls "crimp" is known in the textile trade as "take-up." If 100 yards of warp is required for 90 yards of cloth, the difference of 10 yards is the take-up or length taken up in weaving by reason of the interlacing of the warp with the filling. The method proposed by the Bureau of Standards for determining the amount of this take-up is elementary. It has been known and practiced in the trade from time immemorial. The Bureau of Standards announces that it promises success. Any one with a practical knowledge of textile analysis knows that it not only promises success, but has been long known to be successful within certain limitations. The method gives the difference between the length of the cloth and the length of the yarn, as found in the cloth. For cotton, linen and silk goods in which the yarn suffers little or no change in length during the processes subsequent to spinning and twisting, this method gives a fair approximation of the total shrinkage in length between the spun yarn and the fin-

ished cloth, but in the case of wool goods, which are subject to a material shrinkage in length during finishing, other factors must be taken into account.

The Wisconsin Law Against Fraudulent Advertising

Following a vigorous campaign backed by merchants and manufacturers throughout the State, the following law has been enacted in Wisconsin:

Section 1747k of the statutes is amended to read: Section 1747k. Any person, firm, corporation or association who, with intent to sell or in any wise dispose of merchandise, live stock, securities, service, or anything offered by such person, firm, corporation or association, directly or indirectly, to the public for sale or distribution or with intent to increase the consumption thereof, or to induce the public in any manner to enter into any obligation relating thereto, or to acquire title thereto, or an interest therein for the purpose of defrauding the public, makes, publishes, disseminates, circulates, or places before the public, or causes, directly or indirectly, to be made, published, disseminated, circulated, or placed before the public, in this State in a newspaper or other publication, or in the form of a book, notice, handbill, poster, bill, circular, pamphlet, or letter, or in any other way, an advertisement, of any sort regarding merchandise, live stock, securities, service, or anything so offered to the public, which advertisement contains any assertion, representation or statement of fact which is untrue, deceptive or misleading, shall be guilty of a misdemeanor, and shall upon conviction thereof be punished by a fine of not less than ten dollars nor more than two hundred dollars, or by imprisonment in the county jail not less than ten days nor more than ninety days, or by both such fine and imprisonment; providing that nothing herein shall apply to any proprietor or publisher of any newspaper or magazine who publishes, disseminates or circulates any such advertisement without knowledge of the unlawful or untruthful nature of such advertisement.

While this law is aimed at false advertising in newspapers and printed matter, it is so worded that without undue strain on the English language it can be construed as applying to the false description of merchandise by labels attached to the goods. If this construction is enforced the Wisconsin act will mark a good start toward a merchandise marks act based on the principle of the British law, which forbids the application of any false trade description to goods without requiring that labels shall be attached to give any specified information.

Wool, Tops and Yarn

The imports of wool, tops and wool yarn for the ten months ending April, 1915, are reported by the Bureau of Foreign and Domestic Commerce as follows:

Clothing and Combing Wool, Free

July, 1914 .....lbs.	13,680,588	$4,720,650
August	11,700,980	3,089,974
September	9,096,205	2,315,488
October	7,543,479	1,844,032
November	2,909,260	629,416
December	962,219	194,810
January, 1915	7,445,517	1,753,210
February	16,092,943	3,804,491
March	47,393,129	11,057,566
April	47,927,295	11,654,634

Carpet Wool, Free

July, 1914 .....lbs.	6,150,565	$1,028,569
August	4,777,641	769,841
September	4,705,674	773,637
October	3,942,256	641,568
November	2,541,724	457,522
December	1,955,252	328,200
January, 1915	4,191,043	604,496
February	5,414,962	786,138
March	13,393,129	2,347,774
April	7,639,546	1,254,783

Mohair, 15 per cent. ad val.

July, 1914 .....lbs.	309,250	$101,930
August	238,490	93,848
September	407,651	141,040
October	470,995	169,545
November	443,466	171,401
December	308,911	115,648
January, 1915	298,906	90,553
February	481,013	133,920
March	945,083	268,781
April	267,851	69,350

Tops, 8 per cent. ad val.

July, 1914 .....lbs.	1,064,988	$578,152
August	396,230	191,774
September	563,447	270,546
October	433,688	192,899
November	193,878	79,848
December	75,468	27,615
January, 1915	105,833	39,174
February	72,168	35,016
March	73,285	39,556
April	78,771	36,552

Yarn, 18 per cent. ad val.

July, 1914 .....lbs.	755,956	$544,974
August	307,825	223,713
September	277,355	186,235
October	374,420	247,750
November	83,234	66,712
December	142,255	97,064
January, 1915	121,463	90,628
February	117,985	84,065
March	84,766	66,992
April	30,664	24,724

The British Embargo on Wool

A bulletin recently issued by the Textile Alliance gives the wool trade in the United States revised instructions as to what must and must not be done in order to obtain such wool from the British Empire as is not required. The British authorities appear to have the wool supply well under control, not only while it is on British soil and on the ocean, but after it has reached the United States. Furthermore the privilege of importing British wool by this involved method rests on a very precarious basis, as it is liable to be revoked without notice, the British Board of Trade having informed the Alliance that the continuance of the arrangement depends on the discontinuance of exports of wool, tops and wool yarn from this country. The new bulletin of the Textile Alliance follows:

Special Notice to Persons Interested in the Importation of Merino Wool, Blackface Wool, China Wool, Tops, Noils, Yarn, Wool Waste, Camels Hair Noils, Flannelette Raisings and Wooled Sheepskins from the British Empire:

The application signed by importers for permission to import the foregoing articles through the Textile Alliance, Inc., and subsequent obligations to be signed before possession can be obtained of same, provide specifically that the applicant agrees not to export these articles, or certain products thereof. There is, however, on the part of the Textile Alliance, Inc., and its allied associations a further moral obligation, contained in their agreement with the Board of Trade that it will discourage to the best of its ability and by proper means the export from the United States of any wool, tops, noils or yarns, except to Canada.

PROTESTS AGAINST EXPORTS

We are informed that protests have been made in Great Britain against the export of wool, etc., from the British Empire, and we also know that a careful canvass is in progress to ascertain the exact supplies available for the later requirements of the allied armies. An embargo has already been put upon the export of tops from Great Britain. Should it develop that the United States are sufficiently well supplied with material to permit its exportation, a prima facie case will at once be made against the shipment of further supplies from the British Empire. It would not be necessary under the existing circumstances that such exports from the United States should be in great quantity. A few shipments of small amount may place the whole trade in the same difficult position that existed during the first two months of the year. The Alliance therefore urges those who have applied for licenses through it, not only to refrain from transactions which may be open to criticism, but also to use every proper influence within their power to dissuade others from making such shipments. Consumers who benefit indirectly by the privileges granted by the British Government, are equally concerned to aid in the observance of the conditions in consideration of which these privileges are granted.

GENERAL NOTICE

Arrangements have been made between the British Government and the Textile Alliance, Inc., of New York, whereby merino wool, black face wool, China wool, tops, noils, yarn, wool waste, camels hair noils, flannelette raisings and wooled sheepskins may be exported from Great Britain, Australia, New Zealand and South Africa to the United States through the Alliance, subject to regulations and limitations imposed by the British Government.

The Textile Alliance, Inc., at the above addresses (45 East 17th St., New York City, and 120 Milk St., Boston) is prepared to receive and give attention to all inquiries and applications pertaining to such imports; also to release imports after the importers have met the requirements prescribed by the British Government. Imports awaiting release will be at owner's risk and expense.

APPLICATIONS FOR LICENSES

Any intending importer, who has not already done so, should fill out and execute an application to have his name approved as a recipient of the articles he desires to import, and send same to the Alliance. Blanks for the purpose will be supplied upon request.

All such applications are submitted by the Alliance to the British Embassy in Washington for approval and are then transmitted to the following representatives of the Alliance at the ports named:

Messrs. Freshfields, 31 Old Jewry, London, E. C., who forward them, after approval by the War Trade Department to:

Messrs, Nunn, Smith & Jefferson, 448 Collins St., Melbourne (also at Brisbane and Adelaide).

Messrs. Brandon, Hislop & Brandon, 150 Featherstone St., Wellington, N. Z.

Messrs. Fairbridge, Arderne & Lawton, 141 Longmarket St., Cape Town, S. A.

Importers agents abroad should apply respectively to the following for the purpose of obtaining export licenses or permits to ship:

In England: To the War Trade Department and Messrs. Freshfields, 31 Old Jewry, London, E. C.

In Scotland: To the War Trade Department, London, and Messrs. Freshfields, 31 Old Jewry, London, E. C. and Glasgow Chamber of Commerce.

In Australia: To the Minister of Customs and Messrs. Nunn, Smith & Jeffreson, 448 Collins St., Melbourne, or Messrs. Nunn, Smith & Jeffreson, Brisbane or Adelaide.

In New Zealand: To the proper government officer and Messrs. Brandon, Hislop & Brandon, 150 Featherstone St., Wellington.

In South Africa: To the proper government ofcer and Messrs. Fairbridge, Arderne & Lawton, 141 Longmarket St., Cape Town.

The granting of licenses and permits to ship,

rests solely with the British Government and the Colonial Governments. Interested parties must bear in mind that licenses and permits will be granted only in so far as the requirements of Great Britain and the allied countries may permit, and furthermore, that the granting of a license does not assure that the merchandise is certain to be released upon arrival in the United States.

The Textile Alliance, Inc., is not informed whether applications are granted or refused. Information on such points must be sought from the proper government officers in the port of Egypt.

DESTINATIONS

At present shipments may only be destinated to approved recipients at Boston, New York and Philadelphia, except that wooled sheepskins may also be destinated to San Francisco.

To avoid extra freight, shipments enroute may be diverted to other destinations after satisfactory guarantees have been given to the Alliance.

ROUTING VIA CANADA

Arrangements between the Australian and Canadian Governments permit shipments on through bills of lading to the above destinations to be routed via Vancouver and Canadian railroads.

BILLS OF LADING AND BANKING ARRANGEMENTS

At present bills of lading must read in one of two ways, namely:

(1) "To A. M. Patterson, president, for the time being, of the Textile Alliance, Inc., of New York" (in this case shippers must send all bills of lading to the Alliance's representatives in the country of origin for transmission to us).

Or (2) "To Messrs. (name of approved custodian bankers) for account of the Textile Alliance, Inc., of New York." In this case bills of lading go through the custodian banks as in normal times).

The custodian bankers approved by the British Government are:

Messrs. Kidder, Peabody & Co.
Messrs. Brown Bros. & Co.
Messrs. Lee, Higginson & Co.
Messrs. J. P. Morgan & Co.
The Standard Bank of South Africa, Lim.

The Hongkong & Shanghai Banking Corporation, San Francisco Agency (only for shipments billed to San Francisco for rebilling where through bills of lading to ultimate destinations cannot be obtained, and for wooled sheepskins destined to San Francisco).

Attention is called to the fact that owners must pay all charges imposed by custodian bankers, including rebilling charges, and they should make their banking and shipping arrangements independently of the Textile Alliance, Inc.

We are informed that the rebilling charge at San Francisco is 1-20 of 1 per cent. which, as already stated, is for the account of the owner and must be arranged between him and the bankers.

RELEASE AFTER ARRIVAL IN UNITED STATES

After shipments have been made from abroad, the following features arise in the order mentioned, and blanks for the purpose will be supplied upon request to the Alliance:

(1) As soon as details of a shipment or shipping documents are available the importer should forward to the Textile Alliance, Inc., a "Guarantee by Importer," which document includes a guarantee, request for release, and receipt for charges. If this is attended to before arrival, storage charges and delays may usually be avoided.

(2) The "Guarantee by Importer" must be accompanied by a remittance of 1 per cent. of the foreign cost of the property as shown by the Consular Invoice, to cover the Alliance's charges. The foreign cost shall be considered the total cost at the port of departure, including all charges, but not including prepaid freight and prepaid insurance if any. It is understood that on the expiry of the agreement any balance or fund created for the services and expenses of the Alliance in handling imports shall be returned pro rata.

(3) Shipments are released as follows:

(a) If consigned to the bankers "For account of the Textile Alliance, Inc., of New York," the Alliance authorizes the bankers in writing to release the bill of lading to the guarantor. Stub for this purpose is attached to each "Guarantee by Importer."

(b) If consigned to "A. M. Patterson, president, for the time being of the Textile Alliance, Inc., of New York," the bill of lading is endorsed by the Alliance and delivered to the guarantor and the endorsement constitutes a release. Bills of lading for shipments consigned in this manner come to the Alliance direct from its representatives abroad.

RELEASE OF WOOLED SHEEPSKINS IN SAN FRANCISCO

Wooled sheepskins imported under license of the British Government may now be released at San Francisco to importers there who have made application through the Textile Alliance, Inc., and have received the approval of the British Government.

On account of the distance from the office of the Textile Alliance, Inc., arrangements slightly different from those provided in the case of wool have been approved by the British Embassy on April 16, 1915.

Bills of lading must be to the "order of the Hong Kong & Shanghai Banking Corporation for account of the Textile Alliance, Inc., of New York." This corporation having been designated as a custodian bank by the British Government will hold the skins until the requirements of the Textile Alliance, Inc., have been complied with.

The approved importers shall file with the Textile Alliance, Inc., a form of guarantee covering all future importations through the Alliance. Blank for the purpose will be sent upon request. The Hong Kong & Shanghai Banking Corporation will then be instructed to release to them all subsequent shipments of skins arriving at San Francisco after payment of the Alliance's charges of 1 per cent. of the foreign cost in each case. (See Paragraph 2 under "Release after arrival in United States.")

The Banking Corporation will collect the Alliance charges and remit them to our Boston office with particulars of each importation.

The guarantee will provide that all wool pulled from skins received under it shall be shipped to Eastern States to agents designated in the guarantee and approved by the Textile Alliance, Inc., and may be sold only to approved purchasers who will be required to furnish the Alliance for each purchase the same guarantee as is required for other kinds of wool.

NEW FORMS

Simplified forms have been devised. It is requested that use of the old forms be discontinued. One blank in duplicate covers one entire import transaction and one blank in triplicate covers one entire resale transaction.

SALES

Sale must not be made of the imported articles referred to nor of wool, tops or noils produced wholly or partially from same until the seller in each case applies for and obtains from the Alliance a signed consent to sale, which will only be granted when the seller furnishes a guarantee from the buyer on the approved form. The request for Consent to Sale, the purchasers Guarantee and the Consent to Sale are now embraced in the form "Guarantee by Purchaser."

The War Trade Department requires that when sales are between dealers both parties shall be members of the Textile Alliance or one of its associate bodies. Dealers will therefore find it advisable to become members, if they are not already members, of either the Boston Wool Trade Association, the National Association of Wool Manufacturers, the American Association of Woolen and Worsted Manufacturers, the Textile Alliance, Inc., or the Philadelphia Wool and Textile Association.

TOPS, NOILS, SCOURED WOOL, ETC.

When tops, noils, etc., are sold before they are manufactured, or scoured or carbonized wool is sold before the work is done, the "Guarantee by Purchaser" must, of course, be given before the sale is consummated and it must sufficiently identify the property by marks and numbers, that the purchaser when receiving it may know with certainty that it is the specific property covered by the guarantee. Consequently it is incumbent on the seller to insert in the guarantee before it is signed by the purchaser, a countermark and a range of numbers sufficient to cover all of the bags or bales of merchandise to be furnished, and when the goods are shipped or delivered to the purchaser, the marks and numbers must be shown on the address tags on the packages. Any unused numbers should be reported to us so that we may correct our records.

SAMPLE BALES

Dealers should, if possible, obtain signed blank "Guarantee by Purchaser" from their out of town customers which may in emergency be filled out by the dealers when shipping sample bales. There is no likelihood that this practice will work any injury to the guarantor because he is not bound in respect to any property for which he may give a guarantee, if the property does not come into his ownership or control.

Upon request, we will in such cases send the triplicate guarantee direct to the purchaser instead of returning it to the dealer, so that the purchaser may promptly know what has been filled into the guarantee he signed in blank.

SHEEP SKINS

There is no restriction upon the disposition of the skins after the wool has been removed from them.

YARN

Guarantees given for imported yarn made from imported wool, etc., require the guarantor to print in his invoices and order blanks notice of the conditions under which the yarn is sold. The following form has been adopted for this purpose:

"This yarn is sold subject to the condition that the purchaser will not export it except to Canada, and will resell it only to purchasers who accept and hold it subject to the same conditions."

EXPORT OF CANADIAN WOOL TO UNITED STATES

The Canadian Department of Customs has issued the following notice:

Ottawa, May 25, 1915.

To Collector of Customs:

Referring to Memo. 1916-B, you are advised that authority has been obtained for the issue of licenses to export wool grown in Canada to the United States, upon application to the Department of Customs at Ottawa, setting forth the name and address of the exporter, the quantity of wool proposed to be exported and the name and address of the consignee in the United States, and stating that the wool is to be used for manufacturing purposes only in U. S. mills, and that no part of the wool, or of the yarn made therefrom, shall be re-exported from the United States of America.

Upon receipt of this application, the exporter will be advised in regard to the issue of the license.

Before the wool is shipped from Canada the importer in the United States will be required to guarantee that the wool shall be used only as above stated.

The licenses herein referred to apply only to the exportation of wool grown in Canada.

(Signed) John McDougald,
Commissioner.

EXPORTATIONS TO CANADA

Applications have been received for information as to the conditions under which wool, tops, noils and yarns may be exported from the United States to Canada. The forms of guarantee prescribed for recipients of wool, etc., through the Textile Alliance, Inc., have hitherto precluded exports to any destination. The Textile Alliance, Inc., has, therefore, requested and obtained permission for shipments of wool, tops, noils and yarns to Canada subject to regulations intended to assure that merchandise so exported is actually to

be consumed by consignee manufacturers in the country in question and not diverted to other destinations. This assurance is desired in the case of all wool, tops, noils and yarns, and not merely wool imported under license through the Textile Alliance, Inc., or made from such importations.

Shippers, therefore, should at the time of shipment or prior to shipment send to the Textile Alliance, Inc., at its Boston office, 120 Milk St., particulars of the quantities and kinds of merchandise to be exported and the names and addresses of consignees. On arrival a landing certificate should be obtained from the Canadian Customs certifying to the arrival of the goods and forwarded by the exporter to the Textile Alliance, Inc., at the same address. It is not necessary to obtain the approval of the Textile Alliance, Inc., before making the shipment nor will bonds be required so long as the present arrangement works satisfactorily.

ABUSES

Licensees allowing their names or privileges to be used by unapproved persons for the purpose of evading the spirit of the British and Colonial regulations will have their licenses revoked without notice.

LIABILITY

The president and the Textile Alliance, Inc., assume no responsibility in regard to financial or other arrangements. Buyers, sellers and importers must indemnify and agree to hold harmless the Textile Alliance, Inc., and A. M. Patterson, individually and as an officer of the Alliance, from all liability in connection with the transaction.

French Army Contracts

Last month we reprinted from the Bulletin of the American Chamber of Commerce at Paris a number of clauses which the French Government had consented to insert in future army contracts for the benefit of Americans. These modifications have now been made unnecessary by the decision of the French authorities to place all contracts for military supplies from the United States in charge of J. P. Morgan & Co., New York. Following is the letter giving notice of this arrangement:

Ministry of War.
Paris, May 19th, 1915.

To the President of the American Chamber of Commerce in Paris.

In March I requested the American Chamber of Commerce in Paris to aid the French Military Authorities in establishing direct relations with American manufacturers and merchants, especially for supplies of cloth and shoes.

You were good enough to answer my appeal with a cordiality for which I am sincerely grateful; and ever since, you have been of the greatest service in helping me to attain the objects which I then set forth.

However, by virtue of a recent agreement made with Morgan & Co., of New York, the French Government has put this firm in charge of the purchase of all supplies which it may need from the United States.

Under these circumstances, the Military Authorities will not henceforth deal directly with American manufacturers; but I am nevertheless persuaded that the aid you have given me will have facilitated the purchase of American supplies. In any case, I desire to express to you my cordial thanks, and trust that you will accept, Monsieur le President, the assurance of my highest esteem.

Gauthier.

Preparing for a Famine in Dyestuffs

Owing to the serious situation in connection with the dyestuff supply the National Association of Finishers of Cotton Fabrics has issued a circular to the trade, making suggestions for conserving the stock in this country so as to postpone the day of exhaustion as long as possible. Evidently the Association believes that exhaustion, like death, is certain, for the circular contains this significant statement: "There is no definite information as to just how long a time this country can continue to produce colored goods after the shutting-off of the German supply in March. We do know, however, we are now (June 16) three months nearer the end of our German color supply than we were in March." The circular is as follows:

At the meeting of the National Association of Finishers held in May, after a discussion of the effect of the color situation on our business, it was voted "that the chairman appoint a committee of three to consider the question carefully with the view of suggesting a suitable schedule for the proportion of dark shades and a limitation of minimum quantities accepted in a dyeing order and strike off orders for printed goods, and of other matters looking to the conservation of the present supply of dyes."

This resolution constitutes a very broad commission, and even under normal conditions would mean the collection of a lot of detailed information bearing on the many different lines of work done by this Association and the cost of the various kinds of sampling, in order to arrive at any comprehensive plan looking to the limitation of color lines, strike offs and sample pieces likely to prove a workable plan for us and satisfactory to our trade.

A LIMITED SUPPLY

With the present extraordinary conditions surrounding our supply of color, it is well to recognize that any plan which we might formulate, suitable for normal conditions, would not be of any real value for use at this time, for it is reasonable to expect such limitations would be totally inade-

quate to protect the limited supply of color that is available today.

We will, therefore, consider this subject at this time entirely with a view to our best plan in the present emergency, particularly as your committee was directed to report with special regard to the conservation of the present supply of dyes.

The different companies making up this association have provided for the present emergency in color as looked right to each company. Some have felt the suspension of imports from Germany would be of short duration and have laid in only a small amount of color, declining to pay the advance in prices. Other finishers, anticipating a lengthy shut-off of the German supply, have bought all they could get and pay for with little or no regard for price.

Under these circumstances some finishers can look further into the future than can others. We are all alike, however, facing a possible suspension of colored work of such kinds as cannot be produced by color of domestic manufacture.

GERMAN SUPPLY STOPPED

For seven months after the outbreak of the war color kept coming into America. The record of these imports is kept in value and not in pounds. The value of these imports is about the same as during the preceding year. As the price per pound of many of these colors has advanced and in some instances as much as 130 per cent., the volume of color actually brought in is much below normal. Since early in March, however, no color has been brought in, except what little has found its way out of Switzerland and has not been absorbed by the British market.

Under normal conditions the German supply is credited with representing 80 to 90 per cent. of the total color consumed by the world. This German supply is absolutely shut off today. No one knows how soon it will again begin to appear in this market. The British supply soon after the outbreak of war was placed under an embargo for the British home consumption. No one in this country has any definite information as to when this British embargo will be removed. Our domestic manufacture of color is still in its infancy, and there is no information available today to tell us when a domestic supply of sufficient quantity and variety to take care of our needs will be available.

APPROACHING A CRISIS

There have been many estimates of the available supply of color in this country when the war broke out, and there have also been many estimates of this same supply in March, when the German color stopped coming. There is no definite information as to just how long a time this country can continue to produce colored goods after the shutting off of this supply in early March. We do know, however, we are now three months nearer the end of our German color supply than we were in March. We have already begun to find our colors are giving out one by one, and while some can be substituted for by wood colors, more difficult to apply, requiring different machinery and more expensive methods of application, others cannot be replaced. Their absence will mean a shrinkage of business, a stoppage of machinery in our industry and a consequent increase of expense account to be borne by such machinery as we may continue to operate.

With no detailed information as to the stocks of color remaining in the hands of individual finishers, it is impossible for your committee to make any definite recommendations applicable to the trade as a whole. Each of us individually, however, can sit down with his own inventory of color and by considering it with his weekly report of color used figure out for himself what is best to do in his individual circumstances in this present emergency.

MUST TAKE EVERY PRECAUTION

As manufacturers we must take every precaution to prevent the waste of our color. One preventable waste is possible from the carelessness in the use of this color in our own plants. We should scrutinize this problem very carefully at this time to see that the methods we are employing in our plants will conserve our limited stocks just as long as possible. Waste may also be caused by our efforts to match shades exactly. If we take back goods to rehandle, because they are not exactly right for shade, we are making a grave mistake at this time. In preventing this waste we need the assistance of our customers and their willingness to look at our deliveries with a little less critical eye than heretofore. Again, we may waste a tremendous amount of color in doing sample pieces, strike offs and color lines. To prevent this waste we need all the assistance possible from our customers in the way they make up their finishing instructions.

We do not believe it is possible at this time for us to lay down any general rules that will be a benefit in all cases. On a separate memorandum, however, are set out some suggestions for certain definite lines or work. Each one of us individually can apply these suggestions as his business requires, realizing that to husband our color supply is a duty we owe to our stockholders, our help and our customers.

Following is the separate memorandum to which reference is made in the above report:

In view of the present scarcity of dyestuffs and the fact that no more can be expected to arrive in this country from Germany until after the end of the European war, it becomes vitally necessary for the converters and finishers to cooperate in eliminating all waste of colors and to make the present supply go as far as possible, and important means to this end are the reduction of the numbers of colors in a line and reducing the proportion of dark shades, and also, as far as possible, to eliminate striking off patterns.

If the converter can once realize the uselessness of striking off patterns which subsequently cannot be printed in the season due to the exhaustion of the supply of dyestuffs it will mean to the printers and dyers the conserving of from one to two months' material. The printer realizes the great importance to the converter of strikeoff patterns, nevertheless some means other than those prevailing in the past must be considered for this season.

The desire of the printer is not to shift any burden to the converter, but to use the most intelli-

gent methods to conserve dyestuffs for the benefit of the converters themselves.

In the question of dress goods a simple solution seems to be the using in a large way the reproduction of patterns by lithographic process. This method is entirely feasible in a large number of instances and has already been adopted by some of the more prominent converters.

The application of this process to draperies is not possible owing to the size of the pattern. Consequently the striking off of draperies must be arranged by a mutual adjustment of a minimum yardage to a pattern.

In view of the above you are requested to consider the following suggestions, and if you will be guided by same it will be the means of extending the time for which your product can be finished.

PRINTED DRAPERIES

If strike offs must be made you are asked to adhere to the following schedule: On all patterns up to twelve, rollers inclusive, on all cloths up to 40 inches in the gray, the minimum quantity for strike off must be 5,000 yards on each cloth, divided into not to exceed ten combinations. In regular orders for printing the number of colors must be kept to the minimum with the maximum yardage for each combination, using light colors and light blotches as far as practicable.

PRINTED DRESS GOODS AND SHIRTINGS

Single and two-color patterns should require no striking off. This is also true of staple three and four color floral patterns, particularly on staple fabrics such as voiles, lawns, etc. In the case of more elaborate patterns and fancy fabrics the minimum quantity strike off per color should be not less than 1,000 yards. In the case of regular printing it must be important that the quantities ordered are as large as possible.

SOLID COLOR GOODS

With regard to a limitation of minimum quantities to be accepted in a dyeing order, some of the members of this association are protecting their color supply by providing that all quotations, which are now on record, be considered as quoted on the basis of 2,500 yards to the color.

Below 2,500 yards and down to 1,000 yards to the color they add 1/8c a yard.

Below 1,000 yards to a color, and down to 500 yards to a color, they add 1/4c a yard.

Below 500 yards to a color, and down to 12c yards to a color, they add 3/8c a yard.

On very heavy goods it may be necessary in order to maintain the relation between the cost and the finishing charge for doing small quantities to make a scale of charges based on at least 1/4c a yard rather than on 1/8c a yard increase.

The grading of prices, shown above, corresponds very nearly with the added cost to the dyer of handling goods in small quantities. Such a grading of prices will also appear reasonable to our customer, as it recognizes the difference in value to us of work that comes in a large way, as against small quantities. This grading of prices according to quantity, also encourages our customer to give us just as large a dyeing assortment as his business will allow.

SAMPLE PIECES

All double cuts of 120 yards or less are treated as sample pieces. The cost to the finisher of dyeing a piece of 30 to 40 yards and finishing it is practically the same as it is to dye and finish a piece of 120 yards. It seems desirable, therefore, to treat everything less than 120 yards in length as subject to a sample piece charge. After careful consideration, some members of this association have found that it costs aaout $2 apiece for each sample piece of white goods we put through our process. We have also found that it adds on the average a little over $2 to the cost of the white sample to put our sample pieces into color. Therefore, some members of this association are writing into all their new quotation sheets a clause providing that sample pieces in white, regardless of the finish into which they are put, will be charged for at $2 per piece, and that sample pieces in color, regardless of the shade or finish into which they are put, will be charged for at $4 per piece. It can be stated further that the result of following this plan has shown a decided reduction in the number of sample pieces that the finisher is called on to run.

Stock and Consumption of Cotton in the United States

The Bureau of the Census has issued the following report of the cotton consumed and on hand, and the active cotton spindles in the United States, also the imports and exports of cotton for the ten months ending May, 1915, compared with the figures for 1914:

	1915 Bales	1914 Bales
Consumed	4,585,522	4,731,600
On hand May 31		
At mills	1,798,965	1,365,823
In outside warehouses	2,441,133	947,043
Active spindles, May	31,111,137	31,028,336
Imports:		
Egypt	208,384	113,339
Peru	8,851	11,175
China	18,478	15,312
Other	71,729	48,362
Total	307,442	188,188
Exports:		
United Kingdom	3,593,612	3,290,342
Germany	242,661	2,664,033
France	611,480	1,072,582
Italy	1,018,469	462,073
Other	2,510,489	1,239,982
Total	7,976,711	8,729,012

Owing to the war the reports of the mill stocks and consumption of cotton, formerly compiled by the International Cotton Federation, have been discontinued.

Work in Woolen and Worsted Mills

The National Association of Wool Manufacturers has issued the following report of active and idle machinery in woolen and worsted mills on June 1, 1915.

Per Cent. of Idle Machinery to Total Reported

	Reported	Jne. 1 1915	Mar. 1 1915	Dec. 1 1915	Jne. 1 1914
Looms, about 50"	38,183	30.4	32.7	27.7	24.6
Looms, 50" or less	9,842	25.9	32.	30.	25.
Looms, carpet	2,315	24.5	45.8	48.9	28.3
Woolen cards, sets	3,148	17.7	22.7	30.	19.4
Worsted combs ...	1,646	30.	29.4	41.3	15.5
Woolen spindles ..	1,085,720	17.4	21.5	31.6	25.8
Worsted spindles ..	1,509,581	39.6	33.	33.	18.1

The European Textile Industry

WAGE INCREASE IN GERMAN TEXTILE INDUSTRY

The notice of a wage increase recently issued by the Saxon-Thuringian Weaving Association is of unusual interest, not because of the reason assigned, for it is well known that the cost of living has been greatly increased in Germany since the war, but because of the disclosure of the low wages prevailing in the German textile industry and the insignificant increase that has been granted. The German army is giving the world a remarkable demonstration of efficiency on the battle fields of Europe, but even more remarkable is the example set by the army of men, women and children in German mills and workshops, who are patiently and unitedly toiling to supply their country with the sinews of war and to maintain their own existence on the pittance which this wage increase reveals. The notice which appears in the "Wochenberichte der Leipziger Monatschrift fuer Textil-Industrie" reads as follows:

Owing to the increase in the cost of living, the employes have granted a war increase of wages in accordance with the following scale:

1. Men who are or have been married and whose wages on pay day amount to less than 22 marks ($5.28) per week, will receive an increase of 30 pfennige ($.075) for each working day, the total wages, however, not to exceed 22 marks ($5.28) per week.

2. Unmarried male workers whose wages on pay day amount to less than 18 marks ($4.32) per week, will receive an increase of 15 pfennige (3 1/2 cents) for each working day, the total wages not to exceed 18 marks ($4.32) per week.

3. Female workers who are or have been married and whose wages amount to less than 16 marks ($3.84) per week, will receive an increase of 15 pfennige (3 1/2 cents) for each working day, the total wages not to exceed 15.9 marks ($3.82) per week.

4. Unmarried women whose wages on pay day amount to less than 12 marks ($2.88) per week, will receive an increase of 15 pfennige (3 1/2 cents) for each working day, the total not to exceed 12 marks ($2.88) per week.

5. This increase of wages is not to apply to workers under 16 years of age.

6. Male and female operatives to whom this increase is granted and who have more than three children under 14 years of age to support, will receive a further increase of 15 pfennige (3 1/2 cents) for each working day.

7. This war increase of wages will go into effect on April 30, 1915.

HOSIERY BUYERS OFFER REWARD FOR MILITARY PROWESS

The "Wochenberichte Leipziger Monatschrift fuer Textil-Industrie" in a recent issue, gives the following account of a fund raised in the German hosiery trade to be distributed to soldiers who may distinguish themselves on English soil:

Several customers of the hosiery manufacturers bourse at Chemnitz recently contributed 1,000 marks ($240) to be turned over to the Saxon Ministry of War. This money is to be divided into 20 equal parts of 50 marks each ($12) and given to the first 20 German soldiers who win marks of distinction by military exploits on English soil. If England is not invaded the money is to be expended for the care of cripples.

NEW RESTRICTIONS ON EXPORTS OF GERMAN WOOL GOODS

The "Wochenberichte der Monatschrift fuer Textil-Industrie" in the issue of June 2, 1915, reports that a complete embargo has been placed by the German Government on all exports of wool cloths included in paragraph 432 of the German tariff and weighing more than 300 grams per square meter (9 2/3 ounces per square yard). Previous to this embargo the Government permitted the export of wool cloths providing the shipper obtained from the local chamber of commerce a certificate that the goods had been manufactured or in process of manufacturing previous to Nov. 15, 1914, the object being to permit the completion of contracts made before the war, providing the goods did not reach the enemy. The latest order cancels this modification of the embargo,

which is now complete on wool goods weighing more than 9 2/3 ounces per square yard. This step indicates the growing scarcity of wool in the German Empire. The wool supply is one of Germany's most difficult problems. The German wool clip amounts to only 15,000,000 pounds of scoured wool per year, and the consumption of wool goods is proceeding at an unprecedented rate. There are under arms about 8,000,000 troops who must be clothed and it has been estimated that a soldier on the firing line wears out or destroys a complete suit every six or eight weeks. Probably half of the 8,000,000 are using up wool at this rapid rate, and in addition there are the requirements of a population of 60,000,000 to supply. Early in the war the German army seized vast stocks of wool in Belgium and France, the value of which has been estimated at $300,000,000 to $500,000,000. While these Belgian and French stocks postponed the disappearance of wool in Germany, they could not prevent the famine that was inevitable with an annual supply of only 15,000,000 pounds and consumption going on at the rate of at least 300,000,000 pounds scoured per year.

ADVANCE IN PRICE OF GERMAN FELTS

The "Wochenberichte der Leipziger Monatschrift fuer Textil-Industrie" reports that on May 19 the Associated German Manufacturers of Felt Goods decided to raise the minimum prices 40 per cent. This is a significant indication of the growing scarcity of wool in Germany.

MANUFACTURING ARMY GOODS IN GERMANY

New regulations for the manufacture of cloth for military purposes are reported in the "Wochenberichte der Leipziger Monatschrift fuer Textil-Industrie," the object being to bring the business more completely under the control of the Government. Following is a summary of the new order:

Any breach of these regulations is punishable with confiscation of the stocks of goods, closing of the mill and a year's imprisonment or a fine of 10,000 marks ($2,400).

1. The unauthorized manufacture of military cloth of wool or half wool material of all kinds and colors suitable for clothing officers or men is forbidden after May 15, 1915. The material on loom beams and in the looms on May 15 should be woven by June 30, 1915. Woven goods must be finished by July 31, 1915, at the latest.

2. After May 15, 1915, the manufacture of army cloth is permitted only in officially authorized establishments.

3. The Government will take possession of all stocks of military cloth both in partly manufactured and finished condition. The following goods are excepted from the provisions of this paragraph: Lots of less than 180 meters (197 yards) of one grade of cloth. Also goods weighing less than 600 grams per meter, 140 centimeters wide (19.3 ozs. per yard, 55 inches wide).

4 and 5. All persons, officials or companies having military cloth in their possession are required to make a report to the authorities, giving a statement of the quantity on hand, with full particulars regarding width, weight, color, etc.

7. Each report of military cloth on hand must be accompanied by a sample of each lot of more than 180 meters (196.8 yards) broad width. The sample must be 50 centimeters (19.7 inches) long and 70 centimeters (27.6 inches) wide. A paper label must be firmly fastened to each sample, giving the name, resident and street address of the owner of the goods, with a description of the fabric, all plainly written.

8. In order to facilitate the disposal of reports owners of military cloth are advised to obtain a certificate from an official testing house covering the following points: (a) description of fabric; (b), threads per square decimeter in warp and filling; (c) breaking strain in warp and filling in kilograms. The strip that is tested should be 9 centimeters (3.5 inches) wide, two thicknesses placed together, and 30 centimeters (11.8 inches) between the jaws of the machine; (d) stretch in percentage; (e) weight per square decimeter; (f) proportions of animal and vegetable fibers in the goods.

ADVANCE IN PRICE OF MEN'S WEAR GOODS

Prices continue to advance steadily in the German textile industry. The latest notice to this effect that has appeared in the German trade press, is the following from the "Wochenberichte der Leipziger Monatschrift fuer Textil-Industree" of May 12:

The Association of German Wool Goods Merchants have sent the following notice to the trade: Owing to the rapidly increasing demand for goods and the high prices asked by manufacturers, we have been compelled to increase the price of our lines of men's wear goods 10 per cent. Linings and cotton goods will be advanced 6 per cent. There will be a corresponding increase in the prices of tailor's findings.

MAXIMUM PRICE FOR WOOL IN AUSTRIA

Austria has finally followed the German example and fixed maximum prices for wool. The "Wochenberichte der Leipziger Monatschrift fuer Textil-Industrie" gives the following particulars regarding the order, which went into effect on May 7:

The Austrian authorities have established the following maximum prices for wool to go into effect from May 7:

	per lb.
Finest merino wool scoured	$1.85
aaa/aa worsted wool	1.58
a/b clothing and worsted wool	1.39
c, clothing and worsted wool	1.02
Cigaya wool (d)	.88
Racska (Zackel) wool (e)	.69

These prices do not apply to imported wool.

HIGH COST OF LIVING IN GERMANY

Evidence of the high cost of living in Germany during the war is found in the demands made by the textile mill operatives at Barmen and in Saxony for an increase of wages, as reported by the "Wochenberichte der Leipziger Monatschrift fuer Textil-Industrie:"

The Textile Operatives' Union in Barmen, Elberfeld and Ronsdorf has presented to the mill owners a demand for a wage increase of 3.50 M. (84 cents) per week and the restoration of the rates prevailing before the reduction made during the war. The high cost of living is the reason assigned for the request. The operatives in the Saxon-Thueringian weaving mills have sent a like request to their employers. They ask that an increase of 60 pfennig (15 cents) per day be granted to married men and 30 pfennig (7 1/2 cents) per day to other operatives. They state that the workers recognize fully the duty of all to make sacrifices in the interest of the nation, but the increase in the cost of all necessities of life has been so great that an advance in wages has become a necessity.

COTTON IN GERMANY

The following item regarding the raw cotton situation in Germany is from the Manchester (Eng.) Guardian of June 18:

The action of the British navy in bringing into port here all the cotton found which is suspected of having an enemy destination has had a marked effect in Germany, especially since Italy became a belligerent and Sweden prohibited exports. Before Italy went to war the price of middling American cotton in Bremen was about 10d per pound (20 cents). A week later it had advanced to 1s 4d (32 cents) per pound, and since then it has gone up still further. The Government appears to be uneasy with regard to the supplies wanted for the manufacture of gun cotton, for the War Raw Material Department has issued a notification that all stocks of cotton waste and old cotton rags will be taken over, and, as the stocks of raw cotton are small, it is thought by no means unlikely that all the cotton in hand will be taken over by the Government. The effect of all this has been to induce a brisk demand for the stocks of manufactured goods in dealers' hands, and prices are stated to be advancing by leaps and bounds. The latest advices are that the whole industry is in a state of disorder, important waste spinning and manufacturing branches being completely paralyzed. The finishers, who advanced prices recently, now refuse to deal with coarse goods at all, owing to the large amount of starch they would require for filling.

GERMANY SEIZES COTTON RAGS AND WASTE

The scarcity of cotton in Germany has led the Government to seize all stocks of cotton rags and waste throughout the Empire. This step, which is reported by the "Zeitschrift fuer die gesamte Textil-Industrie," Leipzig, has been forced by the military necessity of conserving all materials required for the production of ammunition:

The general commanding the 12th and 19th army corps has issued an order appropriating for military uses all stocks of old cotton rags and new cotton waste. The order went into effect at noon, June 1, 1915. The stocks affected by the order must be delivered to the authorities between August 1 and 15.

GERMANIZING TEXTILE TERMS

Germany is carrying on a vigorous campaign against the use of foreign words, the textile industry coming in for special attention. According to the "Zeitschrift fuer die gesamte Textil-Industrie" representatives of the "Verband duetscher Detailgeschaefte der Textilbranche" (Textile Retailers Association) and the "Allgemeiner Deutsche Sprachverein" (German Language Alliance) have made up a list of foreign terms which are henceforth to be taboo in Germany:

As a result of a conference between these (above named) associations a list of German words has been prepared, which are to be substituted for the foreign terms now in general use in the weaving and spinning industry. The list includes many terms relating to the clothing trade, silk manufacturing, carpet and upholstery industry as well as the trade in dress trimmings. The representatives of both associations are to exert every opportunity to obtain support for the movement among manufacturers and tradesmen. The list includes about eight hundred foreign terms, which have been translated into German.

It has already become evident that the list adopted by the conference, not having been backed by an order from the Government, will not be accepted by the trade without protest. A writer in the "Leipziger Monatscrift fuer Textil-Industrie" discusses the question, giving a long list of the foreign terms which are to be boycotted, and calls

attention to the fact that the movement may result in serious injury to the foreign trade in Germany goods. He says:

Suppose, for example, that the term "Bengaline" is to be Germanized. The task will be by no means easy. Let us suppose, for example, that it is called "Wollseidenrips", while "Eolienne", another foreign expression, is called "feinin Wollseidenrips". The German merchant has heretofore been certain that a purchaser in St. Petersburg, as well as at the Cape of Good Hope, New York, Buenos Aires or Sidney, would understand clearly what a "Bengaline" is. Now, however, he is called upon to meet a new difficulty in a business already surrounded by obstacles, namely, to explain to each customer the meaning of "Wollseidenrips" and "feinen Wollseidenrips" and other Germanized expressions. This appears to be a very formidable task when the large number of Germanized names is taken into consideration, and it is quite probable that in the end the foreign buyer will lose his enthusiasm and say to the German merchant: "If you cannot or will not sell me Bengaline, then I will obtain it from Swiss or French merchants who at least know what I want.

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THE TEXTILE EXHIBITION FOR 1916

The plans of the directors of the Textile Exhibitors Association for the exhibition to be held in Boston in the spring of 1916 were laid before the members of the association at the annual meeting. The entire Mechanics Building in Boston has been engaged for the week of April 23rd to 29th, as there is no longer any doubt about filling all the exhibition halls. In fact the problem for the managers this year will be to make fair allotment of space to the many applicants who will desire to be represented. An informal canvass shows that practically all the exhibitors in previous years will desire space for 1916 and there are many advance requests from new exhibitors. President Bishop suggested that it would very likely be necessary to request many of the larger exhibitors to try to get along with a little less space so as to provide for as many of the applicants as possible.

The annual meeting of the Association was held this year at the Boston Yacht Club, Hull, Mass. A yacht was chartered for the party which left Boston in the forenoon and after a pleasant sail about the harbor landed at the Yacht Club where the meeting was held and dinner served. Chester I. Campbell, secretary and treasurer of the Association, presented his report which showed that the finances were in a very healthy condition with a comfortable balance in the treasury to finance the next show. The Association is now incorporated with sixty shares of stock, each member being allowed to own only one share. Six new members were elected and one resignation was accepted. The new members are as follows: Curtis & Marble Machine Co., Worcester, Mass.; Davis & Furber Machine Co., North Andover, Mass.; Saco-Lowell Shops, Boston, Mass.; Grosser Knitting Machine Co., New York City; Scott & Williams, Inc., Boston, Mass.; S. C. Lowe Supply Co., New Bedford, Mass. The membership now numbers 55, of which 47 were represented in person or by proxy.

In his address President F. H. Bishop sketched the growth of the Association which, as many of the trade will remember, grew out of an exhibition held in Philadelphia about ten years ago. From the very start the directors have looked forward to the time when its exhibitions shall be a comprehensive survey of the latest developments in textile machinery in all branches. The early exhibitions were almost exclusively confined to cotton machinery, but the last exhibition was much broader in scope and included woolen, knitting and finishing machinery as well as power equipment. It is proposed to broaden out still further. The benefit of these exhibitions is now generally recognized both by the machinery and supply people and by the mill men. It affords a rare opportunity to inspect conveniently under one roof a wide range of improved machinery which would not otherwise be possible without great expense of time and money. The membership of the Association now includes most of the leading textile machinery and equipment concerns in the country and the fact that the exhibition is controlled by them insures its being operated on a high plane and free from the merely money making point of view. President Bishop paid a high compliment to Secretary Campbell for the successful management of previous exhibitions and everyone who knows how well these exhibitions have been conducted realize that the compliment was well merited. The members also appreciate

that to President Bishop is due a great amount of praise for his unfailing faith, optimism and hard work.

At the election which followed, Chester I. Campbell was unanimously re-elected treasurer and clerk. The old board of eight directors was reelected as follows: Frederick H. Bishop, Universal Winding Co.; George P. Erhard, the Stafford Co.; Charles F. Hutchins, Crompton & Knowles Loom Works; Edgar F. Hathaway, American Warp Drawing Machinery Co.; Lewis E. Tracy, Lewis E. Tracy Co.; Charles A. Chase, General Electric Co.; Leon W. Campbell, Woonsocket Machine & Press Co.; Edwin H. Rooney, Whitin Machine Works. At a subsequent meeting of the Board of Directors President F. H. Bishop was unanimously reelected.

The social features of this meeting were entrusted to an efficient committee, consisting of George P. Erhard, treasurer of the Stafford Co. and Secretary Chester I. Campbell, and every detail was carried out to perfection. Dinner was served in the main dining-room and during the courses the orchestra which provided entertainment on the yacht was transferred to shore duty, and assisted by Chester I. Campbell and S. C. Lowe as volunteer conductors, gave a fine selection of popular music with the cooperation of special talent on the drums.

Following the dinner there was more discussion of plans for the next meeting and in the late afternoon the party reembarked for the trip back to Boston, confident that the 1916 Exhibition will be better than any preceding.

HIGHEST PRICE EVER PAID FOR WYOMING WOOL

The National Wool Grower

Cokeville, Wyoming, May 31.

Frank Mau of this place has just sold his clip of straight Cotswold to buyers for Jeremiah Williams & Company of Boston, for 29 cents per pound. This is said to be the highets price ever paid for wool in the state of Wyoming. A year ago Mr. Mau bought the purebred Cotswold flock of the Afton Livestock Company and it is this wool that has just been sold.

THE WOOL GOODS MARKET

New York, June 30, 1915.

The opening of men's wear fabric for the spring season of 1916 has been made on summer or tropical cloths and serges. Tropical fabrics have created an unusual stir on the market and many new fabrics and makes have appeared. About every mill that can make an eight or nine ounce fabric of worsted, mohair or wool and combinations thereof with silk or cotton seem to have samples of tropicals on the market. Prices range from around 30 cents for three-quarter goods up to $1.35 for six-quarter, all worsted fabrics.

The desire for business on the new sensation of the time seems to be more general than it was on serges a few seasons ago, when the demand for these fabrics seemed to be unlimited. The fact that cassimere or wool dress goods mills can make tropical fabrics has caused an unusual number of lines to be placed on sale. Both woolen and worsted mills are offering samples of the various fabrics.

Many of the leading and most favorably known makes of tropicals have been quietly shown for some time and the clothiers handling such lines have placed their orders. This they did with confidence by reason of their great success on sales in two piece summer suits, made from the goods during the season of 1915.

A satisfactory business has been done on makes having a record for giving satisfaction. Some of the new cloths have met with favor and have secured a fair business as far as they have been shown. A much wider range of styles and colors are being shown than were attempted a year ago. Many of the new effects are more desirable for the general trade than those formerly made. It is considered that the new departure in styles will result in their being more generally used in markets where the extremely light colors are not appropriate or popular. The darker colors will make them available for a longer season than that for very light colors, such as have been popular in the various lines of tropicals. The sale of these fabrics is only fairly begun and will doubt-

less largely exceed the business done on them a year ago.

Buyers state that the business is being overdone with so many lines being offered, but the fact that the market is flooded with new lines of summer fabrics does not mean that they will all be sold and made. Some manufacturers will doubtless be disappointed.

The trade will settle on a number of makes that show special merit and these will secure the initial order business. These fabrics fill a long felt want and make comfortable suits for the warm season, for which no suitable clothes were made until the tropicals were introduced and which are in the acendency on the market. These clothes require manufacturing of a high grade to bring satisfactory results.

The search for names suggestive of coolness for summer or tropical fabrics has caused some confusion and unintentional trespassing on the rights of others. One firm adopted the name "Keep Kool" for their fabric and after advertising it they were promptly notified, in a rather peremptory way, by a prominent Philadelphia clothing firm that the latter firm had copyrighted the name and that their rights were being infringed by the first named company. The manufacturers immediately changed their name to "Kooler Kloth" which will undoubtedly prove to be fully as attractive a name. Another prominent handler of tropical cloths announced that "by request" they had dropped the name "Tropical" and substituted in its place "Summercool Cloth." About the same time this change was announced another firm published that they had opened their "Suma Kool" cloth, the difference in names is probably enough to avoid a clash of interests on the market. It is to be hoped that both manufacturers will keep "Kool" over the similarity of names.

The serge business has held second place in sales for the new season and they seem to be returning to favor. With the opening of the lines, considerable business is reported to have been done on leading lines on which a guarantee of colors is given. One feature of the serge business has been the sale of stock goods that were carried over from last year. Buyers began to realize that stock goods meant that the colors were of the best and the prices were slightly below those for new goods. Some stocks were sold out and one seller stated that he could have sold a thousand more pieces than he had, at full prices.

Most of the leading mills making serges are reported as having on hand enough dyestuffs to carry them through a part, and in some cases, through the entire spring season. These mills are guaranteeing their colors to be up to the standard. Unless arrangements are made for the resumption of importation of German dyestuffs, it is evident that buyers placing late orders will have to accept goods colored with inferior dyes that cannot give satisfaction.

The new lines of serges show advances of from five to seven and a half per cent. Those who own carried-over goods should obtain good prices for them, as their colors are beyond question and the fabrics the same as now being sold. Such stock goods have been sold by some agents at lower prices than are being obtained for new goods, while a little firmness on the part of the sellers would give them the advantage of an unusual opportunity to obtain advanced prices for stock goods that will give as good or better satisfaction than the new goods to be made.

The small business done a year ago has resulted in the depletion, to some extent, of the stocks of both the retail and wholesale clothiers, consequently it is anticipated that the woolen business will result in a more active market with more satisfactory results for manufacturers.

Reports from the various mill districts are to the effect that a comparatively few mills are well sold ahead for sometime to come. The vast majority of mills are short of work and unless more army contracts are secured others will be added to the list. With one hundred million population all using woolens and an export business recently having been developed for both men's and women's wear, together with the very large export of army blankets, uniform cloth and overcoatings, it

seems strange that any of our mills should be without enough orders to keep them well employed to full capacity. It may be that our mills have sufficient capacity to supply the demands of Europe as well as that of our own people. The general opening of the better grade of men's wear fabrics is looked for after the first of the week in July and later during the month.

Plaids are growing in favor and will be prominent in the new lines now being prepared and shortly to be placed on sale. Checks will also be conspicuous and entirely new designs in more indistinct stripes than have been worn will be a new feature in styles for suitings.

A serious condition that our manufacturers have to confront is competition from others who own wool or dyestuffs purchased at prices lower than those prevailing when samples are placed on sale. Such conditions are sometimes used to make considerably lower prices for fabrics than can be made by those making the same or similar fabrics based on the actual prices for those commodities. In other words the advantage of low prices for stock is given to the clothing trade to secure business at a small profit, at the same time establishing prices that others cannot compete with, thereby ruining the chances of the majority of legitimately priced fabrics being sold at a profit. This is the result of having mills of too great capacity and the over-anxiety to secure orders at the cost of legitimate business.

The army contract business became quite inactive, with few contracts being offered and with specifications, prices and terms that have not been satisfactory to manufacturers. English manufacturers are making strenuous efforts to supply the Allies with their woolen goods and are making cloth for the French army, which may account for the falling off of business here for that government.

Several new lines of dress goods for the 1915 spring season have been shown, to some extent, and have been favorably received by the trade and a number of satisfactory orders have been placed. The general opening of the various lines of these goods will be made during July. The selling agents profess to be greatly encouraged with the interest shown on the part of buyers. They feel confident of a large season's sales at profitable prices, with a good percentage of export business in view.

The duplicate order business on fall goods for women's wear has begun to come in and shows a large increase in yardage on account of the prevailing style of wide and pleated skirts. Manufacturers are confidently looking forward to a large dress goods business on account of the new fashions which require entirely new dresses for about every woman in the land, as the old narrow dresses cannot be enlarged or widened.

Some colors of dress goods have been discarded from fall lines on account of the impossibility of securing the required dyestuffs for their manufacture, at any price.

Foreign buying of women's wear has become of some importance and both English and French sources have made purchases here. It is considered that the demand from these countries will reach a considerable volume during the new season, as buyers state that the goods cannot be procured abroad.

The situation on dyestuffs continues to be the most serious menace the manufacturers have to confront. Comparatively no dyestuffs are being imported and the supply is entirely inadequate to the demand. Several lines of heavy men's wear were withdrawn from sale on account of the scarcity of the dyes required for their production. Buyers demand guarantees of colors on about all fabrics being offered and in some cases they cannot be given. A number of instances are reported where experiments with inferior dyes have resulted in imperfect colors and the consequent damage of large quantities of goods. Prices for dyestuffs have advanced several hundred per cent. and to such an extent as to cause considerable advances in prices for fabrics.

It is daily becoming more evident that relief from the dyestuff situation must soon come or some mills will have to be closed for an indefinite period.

COTTON MANUFACTURING IN CHINA

By R. A. Morgan, Heng Foong Cotton Mfg. Co., Shanghai

The manufacture of cotton textiles in China by the use of mechanical power is a comparatively new industry. As in other countries this work has been done by hand for ages, but there has been an awakening in China and the last quarter of a century has seen a decided change in this industry. Beginning on a very small scale the cotton manufacturing industry has grown until there are now about forty modern cotton mills in China, about half of which are located in and near Shanghai. All are in the northern part of the country, near the cotton fields. The spinning industry has grown faster than weaving, as is shown by the figures representing the present equipment. There are 841,894 cotton spindles in China, while the looms number only 3,728. This discrepancy is due to the fact that the hand loom is still in extensive use. Many of the mills have no weaving machinery, while practically all devote a part of their equipment to the production of weaving yarns for sale to hand weavers. Cotton yarn is a staple commodity in most of the stores of Shanghai and the other manufacturing cities and the hand weavers can buy the bundled weaving yarn in any quantity. A large quantity is shipped to the interior and the southern districts.

The cotton industry in China has its advantages and disadvantages. Some of the advantages that might be named are an abundance of cheap labor, no restrictions by law as to working hours and conditions of manufacture and the natural ability of Chinese to use their hands skillfully in the manipulation of threads. There are, however, the disadvantages which arise from the mills being located far from the center of the industry. Practically all the machinery and supplies are imported. The Chinese ignorance of machinery and the biased way of viewing the matter makes it difficult for the Chinese to adapt themselves to an industry of Western origin.

The Chinese accomplish the same result as the foreign mills; that is they produce yarn and cloth, and they do it remarkably well. They are rapidly learning Western ways. The problems of increasing the equipment and improving the quality are being seriously considered. It is safe to say that China will yet take its place among the prominent countries in the cotton manufacturing industry.

At present only plain goods of the coarser grade are being made in China. The yarns vary in size from 10s to 20s with some going as high as 32s. The cloth is mostly white sheeting, drills and osnaburgs, weighing from two to four yards per pound, and practically all being from 30 to 36 inches wide.

The cloth, like the yarn, finds its way to the native dyer before it is delivered to the consumer. These dyers operate a small outfit, generally in their own home, and dye the cloth by hand. The color is indigo blue in varying shades with a small quantity of black. This cloth is often taken to the house top where it is hung on bamboo poles to dry. Sometimes it is spread on the ground. Often one can see great spaces taken up with these blue banners. After dyeing it is ironed and rolled into a bolt and placed on sale at the stores of dealers in this special cloth.

China is a great user of cloth. The four hundred millions of people must be clothed. The Chinese wear more clothes than the inhabitants of Western countries, as no houses are heated and the climate is quite cold for many months of the year. This makes China an important market for cloth and eventually will be the means of making her one of the great cotton growing and manufacturing countries of the world. With more training to the vast army of cheap laborers and adequate support she will manufacture great quantities of cotton cloth within her own borders. This is a matter for American manufacturers with an eye to foreign commerce to ponder over. Already it is practically impossible for the American mills, with their high cost of production and extravagant methods, to compete with the Chinese mills on the class of goods mannufactured here. This condition is not going to improve. It, therefore, resolves itself into

one of two things. Either the American mills desirous of entering the Chinese market must go on finer goods than is being made here or invest capital and build mills in China for the production of cloth.

Mills are being built by foreign capital to some extent now and it seems to be a promising field. The mills in China are practically all making money. With the efficient management given them that is applied to the American mills, the returns could not fail to be satisfactory. It would be well for the manufacturers of America to change to fine goods for the Chinese market so far as conditions warrant. In exporting goods to China, it is essential to have an American representative on the ground, as the Chinese are great believers in this matter of form and in that way confidence is more quickly established. The foreign representative naturally inclines the buyer to the production of his own country and the American loses the business. Now that the eye of all America is directed to the South American trade, I want to suggest that he should not lose sight of the vast market lying just across the Pacific where "truly the harvest is great, and the reapers are few."

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SOUTHERN TEXTILE EXPOSITION

The autumn convention of the Southern Textile Association will be held at Greenville, S. C., on November 5th and 6th and in connection with that meeting and under the auspices of the association there will be an exhibition of textile machinery and supplies on November 4th, 5th and 6th. Greenville is in the centre of a large textile mill district, there being 2,500,000 spindles within a radius of 40 miles, and it is expected that this will result in a large proportion of the attendance being practical mill men. A strong executive committee of machinery and supply men has the matter in charge, assisted by an auxiliary committee composed of mill superintendents. The membership of the Southern Textile Association is composed largely of the superintendents and foremen of departments of Southern mills, men who are interested in the practical side of the business.

EXPOSITION OF CHEMICAL INDUSTRIES

This is an opportune time for a National Exposition of Chemical Industries in view of the interruption of importations of many chemical products on account of the war. It is announced to be the first comprehensive effort ever made in this direction in this country and the new Grand Central Palace of New York City has been engaged for the week of September 20th. We are informed that the coal tar and dyestuff branch is expected to be represented with special bearing on the textile industries. During the past few years there has been a marked tendency towards specialization of these trade exhibitions which attract visitors principally from among those connected with the industry, resulting in mutual advantage to exhibitors and visitors.

It is expected that this exhibition will do much to show what great progress has already been made by the American chemical industry, that it will lead to a fuller realization of the possibilities of chemical invention and appreciation of the great debt owed by the general public to chemical achievements as well as to the future protection of the industry by legislation. The mantgement is experienced in the direction of trade expositions and they are assisted by an advisory committee comprising the following gentlemen, which seems to insure the success of the undertaking: Raymond F. Bacon, Director Mellon Institute; Charles H. Herty, President American Chemical Society; A. D. Little, of A. D. Little, Inc.; R. P. Berry, of Barrett Mfg. Co.; William Cooper Procter, of the Procter & Gamble Co.; E. F. Roeber, Editor "Metallurgical and Chemical Engineering"; George D. Rosengarten, President American Institute of Chemical Engineers; T. B. Wagner, of Corn Products Refining Co.; Utley Wedge, of Tennessee Copper Co.

During the exposition it is expected that various meetings of chemical societies will be held in the convention hall in the same building and also lantern slide and motion picture exhibits to which the public will be invited.

COTTON TEXTILES IN ARGENTINA

From a Report Made by the Buenos Aires Branch of the National City Bank of New York

(Continued from June.)

The demand for plain printed goods has been falling off during the past few years, for the reason that it meets serious competition from cheap novelties such as crepes and voiles. One dealer stated that the annual sales of his house had dropped from 7,000 cases of percale to 700. The only large importer of percales in the Argentine is selling them at a price with which the others are unable to compete with success, and they state that they fail to see how he can make a profit. The fact is, however, that this house is the direct representative of the Manchester mill and the goods are not required to bear the middleman's profit.

DRESS GOODS AND COLORED SHIRTINGS

There is a heavy demand in the Argentine for gingham in the cheap grades, and the red striped cloth is very popular. Zephyrs sell well both as dress goods and as shirtings. Most of them come from England, but Italy and Germany supply a certain quantity. The standard widths are 68 to 70 centimeters (26.77 to 27.55 inches) and 80 centimeters (31.49 inches). The best grades of zephyrs come in wider widths. In the fine zephyrs the 27 inch goods are used for dress material, and both the 27 and the 32 inch for shirtings, but of the two the 32 inch widths sell best. Shirt manufacturers prefer the latter width, but the retailers prefer the narrower as it costs them less and they are able to sell it at almost as high a price as the 32 inch width would bring.

The sales of zephyrs have declined for the same reason that the percales have dropped off; novelties have captured the fancy of the consumers. Crepes have been represented in the Argentine market for about two years.

One of the most important factors in the manufacturing of these textiles is the weight. The dividing line between two customs tariff classifications is the weight of 80 grams per square meter (2.359 ounces per sq. yard). All goods weighing less pay a duty of $0.405 per kilo ($0.184 per lb.), and goods weighing over 80 grams (2.359 ounces) pay duty at the rate of $0.243 or $0.216 per kilo ($0.11 or $0.098 per lb.), depending on the kind of fabric. As a result the dealers find it profitable to import only very fine goods which weigh over 80 grams per square meter (2.359 ounces per sq. yard). Occasionally when an importer sees a sample of cloth that weighs a little less than 80 grams (2.359 ounces) he gives his order for it on condition that it be sized so as to bring the weight up to or slightly over 80 grams per square meter (2.359 ounces per sq. yard).

CORDUROY

Most of the corduroy comes from Spain. Large quantities of the cheaper grades are sold in the interior of the country. The finer qualities are sold in quantities for children's clothing only. The staple cloth is that with the wide interval. Bright colors are not saleable. Dark blue and brown are the most popular colors. The material is used a great deal by people from Spain and other countries of southern Europe, for trousers and other articles of men's wearing apparel when a material of great durability is required.

FLANNELETTE

The strongest demand for flannelette in the Argentine develops during the winter months. In the material for dress goods English mills lead. The German product, in the heavier weights, manufactured of cotton waste, is very popular for certain purposes on account of the low price at which it is sold. The best quality of flannelette must be napped on both the face and the reverse, with the design on both sides. In the cheaper grades one finished side is sufficient.

The weight and width of the flannelette depend upon the use for which it is intended and the part of the Republic in which it is sold. Some of the winter months in Buenos Aires are rather chilly so that the better class of flannelettes which are practically all sold in that city should weigh from 100 to 120 grams per linear meter of 70 centimeters (27.559 inches) width (equivalent to 4.217 at 5.043 ounces per square yard). Goods for sale in the northern part of the Republic, where the temperature is milder, may be as light as 100 grams per square meter (2.949

oz. per sq. yd.). Still other parts of the country require weights up to 200 grams per square meter (5.8985 oz. per sq. yd.). The widths also vary from 70 to 75, 80 and 90 centimeters, and even 100 centimeter widths are sold (47.24, 49.21, 51.18, 55.12 and 59.05 inches).

BOMBAZINE

Both the finished and unfinished bombazines sell well in the Argentine, and one prominent dealer stated that in his opinion this is a line in which the North American manufacturer could easily compete. The European mills produce the article at a lower cost, but the American product has the reputation of being so much superior that the additional purchase price is considered justifiable.

DENIMS

The denims are among the most important textiles, from the point of quantity, on the local market. They are used by working men in the cities and throughout the agricultural districts. Indigo blue is the most popular color. The common widths are 70 centimeters (27.56 in.) and 130 and 140 centimeters (51.18 and 55.12 inches), while weights range from 160 to 250 grams per square meter (4.7188 to 7.3731 oz. per sq. yd.). The following prices on Italian products at the place of origin were obtained:

70 centimeters wide (27.56 in.), weighing 240 grams per square meter (7.1076 oz. per sq. yd.), $0.125 per meter (10.515 cts. per yd.).

136 centimeters wide (53.54 in.), weighing 215 grams per square meter (6.37 oz. per sq. yd.), $0.175 per meter (16 cts. per yd.).

136 to 140 centimeters (53.54 to 55.11 in.) wide, weighing 160 grams per sq. meter (4.718 oz. per sq. yd.), $0.16 per meter (14.63 cts. per yd.).

TELA MARINA

Tela Marina, of which samples have been secured, is a plaid woven fabric manufactured in Italy and England, sold in Argentina for dress goods in the moderate winter season in large quantities. The Italian product is the best, and the British product is manufactured as an imitation of the former.

BRIN

Brin comes in a plain weave in tan, grey and slate color. It is extensively used for making long dust coats for travelers and in the cheaper grades for similar coats for school boys and clerks. The wearing of these long coats over their heavier garments by school boys and clerks in mercantile and industrial establishments is a custom peculiar to this country and creates an unusual demand for this cloth.

DUCK

The importation of cotton duck and canvas is not as extensive as might be expected. Its principal use is for making tents, awnings and sails, and for the manufacture of alpargatas, a low shoe or slipper, with rope soles, used largely by the poorer classes in all Spanish countries. This class of textiles is protected by a high import duty, which has proved so great an advantage to local production that the industry has grown large, and is now supplying most of the local demand. The domestic product is of good quality, usually better than the North American article of like price. Nevertheless there is still a considerable amount of the old "Woodbury" duck, which has been the standard since the old clipper ship days, imported. The United States manufacturer has never been strong here in colored duck, having been unable, apparently, to compete in price. Colored duck is manufactured in the Argentine and the annual importations show the result of the domestic competition by a gradual falling off.

LENGTHS

Goods of ordinary quality (with the exceptions heretofore mentioned in this report, i. e., white and unbleached sheetings, etc.), usually come in 40 or 50 yard lengths. The finest goods are sold in shorter lengths. The pieces should be stamped with the mark and with the width and weights, and in the metric system, or both English and metric systems.

PACKING

Packing cases should not weigh over 300 to 350 kilos (660 to 770 pounds) each. They should be well made, of durable lumber, and ironed to stand rough handling to and from

the ship and elsewhere, with due precaution against excess weight.

INVOICES

If the exporter is not already informed, he should consult the nearest consular representative of the Argentine Republic as to the manner in which he should prepare his invoices. These should state the nature of the contents of the cases, the number of cases, the length of the various pieces they contain, the weight per square meter of the goods, and the net and gross weight of the package. The weight per square meter is essential as that is the basis of assessing duty, and attention to this detail will prevent delays in the clearance of the shipment through the custom house.

ARRANGEMENT OF CONTENTS

Goods up to 70 centimeters (47.24 in.) in width are not usually folded parallel with the length unless specially requested by the importer. The ordinary fabrics, cheap and medium grade goods, such as percales, shirtings, zephyrs, etc., over 70 centimeters (27.56 in.) in width are usually folded once with the length not exactly in the center, but about a centimeter (roughly 3/8 of an inch) to one side of the middle so that the two edges will be about two centimeters (roughly 3/4 of an inch) apart. This is done on practically all white goods and most percales.

The method used in folding cheap and medium goods is known as book folding. After the goods have been reduced to a width of about 40 inches by being put up in multiple fold form, the two ends are brought together in the middle, like a book, and the pieces finally folded in this manner should be about eight inches in width. The best goods, such as French muslins, sometimes measure 12 inches across, while some of the cheaper peracles measure only 6 inches. The best dress goods, and heavy fabrics like bombazin and flannelettes are folded in a plain roll. No stick should be used, as the weight of the stick or board would be included in the weight upon which duty is assessed.

COMPOSITION OF PRICES

Prices are quoted by some of the manufacturers of Europe f. o. b. Others are quoted at factory, with additional expenses charged as separate items. Still others include some of these expenses in the quotation, and add others as extra items. British prices are usually factory, with other expenses separate. There appears to be no uniform rule in this connection, the procedure usually being in accordance with previous understandings between the interested parties.

The item "case" usually appears on invoices. On one invoice the following charges for cases of different dimensions were noted:

92 × 15 × 109 cms ..... 15/—
89 × 59 × 89 cms ..... 13/8d.
94 × 79 × 109 cms ..... 19/8d.

Even samples appear as items of expense in some invoices. An item of "34 samples .....£1. 4. 6" was seen on one invoice, and on another an item covering 14 sample sets apparently of a high class of goods, at £1. 4. 0. Other items consisted of freight to port of embarkation, bill of lading, consular invoices, cartage to steamer, postage on documents, all payable by the importer. Copies of invoices and shipping agent's statement are on file in the office of the Foreign Trade Department.

Prices of Italian goods are quoted f. o. b. Genoa, on account of the subsidy allowed by the Italian Government on all cotton textiles exported.

German prices include the freight from factory to steamer, but packing charges are extra.

TERMS

Liberal terms have been allowed to the textile trade. Many manufacturers have been doing business with local concerns, on four and six months open accounts, dating from the date of the invoice, some with the privilege of extension for another six months if the purchaser found it inconvenient to pay at the end of the first period. Some importers say that they have never been drawn on for their purchases. The importers in turn have extended long credits to their customers. Present conditions may, however, result in the gradual abandonment of this practice to a certain extent. Recently some fifty of the most important importers

made an agreement not to extent credits to their customers of more than five months. This action was no doubt caused by the condition of the local market, and also probably was influenced by the action of European manufacturers. One importer stated that Manchester manufacturers in view of conditions there have demanded cash against documents. The dealers here do not look with favor upon manufacturers who attempt to shorten the credit terms, and are inclined to make their purchases elsewhere if they can get more favorable treatment.

SELLING METHODS

Textiles are imported into and distributed in the Argentine by about ten large first-class houses, and a large number of smaller houses, all located in Buenos Aires. The larger establishments maintain purchasing branches in the textile manufacturing centers of Europe, Manchester, Milan and Hamburg. The larger Buenos Aires houses buy little or nothing here, because their European buyers are in a better position to compare prices and judge the quality of the output of the various factories. Contrary to general supposition, these houses are not bound, except by long custom and the belief that it is more to their advantage to purchase from the European manufacturers. If the American manufacturer can convince them that it will be to their advantage to buy in the United States, there is no doubt that they will establish their purchasing agencies there. The manager of one of the large local houses recently stated that his Manchester representative would probably go to the United States to examine goods there. Another manager who recently returned from an unsatisfactory trip to Manchester is now contemplating a visit to the United States in the interests of his house. Some of the smaller houses also are represented in Manchester, but most of them order through the Buenos Aires representatives of European manufacturers. These men receive samples from Europe and take orders on a small commission, stated by some to be only one per cent. Small houses also buy from the larger local importers.

It is the rule that importing houses owned by foreigners, or persons of foreign extraction, buy largely from their own countries, i. e., Italian firms from Milan, Spanish firms from Barcelona, etc.

BUYING SEASONS

Most of the buying here is done a year ahead of the season. The seasons are the reverse of those in the United States. Summer orders are placed in January and February, and goods are delivered in July and August. Winter orders are placed in July and August and deliveries are made in January and February. Some of the smaller houses buy as late as March and April, and September. The wholesale buying season precedes the retailing season by about six months. The styles of European origin are usually shown in Argentina in advance of those of North America. The reason for this is that Argentina follows closely the French and other European vogues, and novelties that appear here very nearly coincident with their appearance in the country of origin, and ahead of their appearance in the North.

PRESENT CONDITION OF MARKET

Leading dealers state that in most lines, owing to present financial conditions and consequent restriction of purchases by the consumers, their purchases of stocks of textiles have exceeded the demand by almost a year. The possibility of interference with the European sources of supply has developed a receptive and in a few cases an active interest among importers in the possibility of buying suitable North American goods. They predict that demand will be normal by the end of 1915, and that buying on a large scale will then be resumed. They appear to be well disposed toward the North American manufacturer as a rule, but state that he can expect to do little more than to study the market during the next few months.

Synthetic dyestuffs imported by Italy had a value of $168,000 in January, 1915, compared with $144,000 in January, 1914, and $191,000 in January, 1913.

TEXTILE WORLD RECORD PRIZE WINNERS

The winners of the Textile World Record prizes at the Philadelphia Textile School in

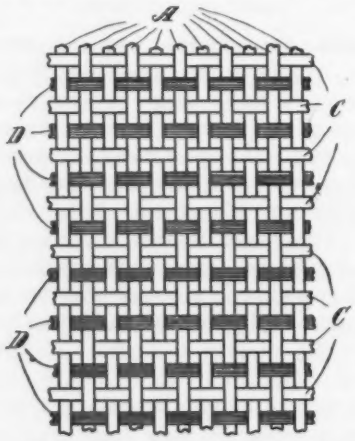
E. NELSON WEIR, AWARDED THE FIRST PRIZE

HARRY G. FISH, AWARDED THE SECOND PRIZE

the class of 1915 are E. Nelson Weir and Harry G. Fish. Mr. Weir received the first prize awarded to the student of the third year class in chemistry, dyeing and printing who attained the highest rating for the year's work. Mr. Fish received the second prize awarded to the student of the second year class in chemistry, dyeing and printing who attained the highest rating for the years' work.

A FABRIC FOR MEN'S WEAR

The illustration shows an improved construction for men's wear goods, more particularly for use as an outing cloth. The construction has been recently patented.



AN IMPROVED FABRIC FOR MEN'S WEAR

The inventor states that its purpose is to provide a cloth of peculiar brightness and characteristic luster, one which is cool in warm weather, which keeps its shape and which can be washed without losing its luster. A continuous strong cotton warp is used, which may be of single or ply yarn, preferably two ply. The filling is threads, one pick of mohair and then a pick of silk or of artificial silk, preferably the latter. These mohair threads should be of combed fiber. The illustration shows an enlarged section of the cloth.

A represents the cotton warp threads, C, the mohair weft threads and D, the filling threads.

Cotton piece goods imported into Bushire, at the head of the Persian Gulf, total about $2,500,000 in normal times, of which four-fifths are from Manchester, England.

Correspondence and Notes

UPON TEXTILE TOPICS AT HOME AND ABROAD

ESTIMATING THE COST OF WOOL GOODS IN ENGLISH MILLS

By Our Regular English Correspondent

The impression is prevalent in both countries that the methods of costing in use in England are somewhat less elaborate than those employed in the United States. The fact may be so in general, but for want of uniformity upon either hand the opinion can only be admitted as a generalization. There may be private systems in use in Britain as fine and complex as any in the United States, but the usual inclination is to reduce clerking and calculation to the minimum and to avoid the expenditure of time and money over items that are too small materially to affect the case.

Many concerns in the British woolen and worsted industries began business with systems of bookkeeping of the most crude and rudimentary type and have only amended their ways under the pressure exerted by losses, by the banks or by the professional accountants in charge of the audits. Indeed the accountants have had great influence and owing to the local groupage of the industries they have had the opportunity to become expert in the indispensable needs of the manufacturer of wool. Standard systems have been evolved by individual accounting firms who have imposed their methods upon their clients and the examinations of one or two of these systems in so far as they relate to the departmental work of the mill makes perhaps the best demonstration of how costing is done in England.

FORM-I

COMBING STOCK AND COST BOOK

LOT..... QUALITY..... % TOPS % NOILS

DATE COMMENCED..... DATE FINISHED.....

STOCK REFERENCE No	FROM WHOM PURCHASED	DESCRIPTION MATERIAL & PROCESS	POUNDS	PRICE OF MATERIAL & PROCESS	CASH COLUMNS	POUNDS PRODUCED	COST PER POUND	REFERENCE NOS & POUNDS ISSUED
						NOILS TOPS		
		Port Phillip Greasy Lot	a	a'	a^2			
		Combing	b	b'	b^2			
			DEDUCT NOILS					
		.....POUNDS OF TOPS COST						

Let it be understood in the beginning that for substantially every process of woolen or worsted manufacture, in Yorkshire at least, there is a trade price. That is to say, there is a price at which the work would be undertaken by any of several firms as commission work. This is a standard market price well known to all parties to the business. In doing the work himself the manufacturer expects to get a profit that would otherwise go to the commission worker. In costing for the purpose of arriving at the

selling price he assumes his ability to do the several sorts of work at the same cost as other people. Each operation is taken at the trade price, cost of materials is added, a percentage is put on for profit and the resultant is the price asked. The system has been outlined in his book "Textile Manufacturers' Bookkeeping" by G. P. Norton, a Huddersfield accountant whose firm has probably done more than any other to impress its methods upon the English woolen and worsted trades. Understanding of the system will be facilitated by quoting the material parts of the forms of account recommended for use in the several departments of a mill making woolen and worsted fabrics:

(a) Grease weight of wool.
(a^1) Price of wool.
(a^2) Cost of Wool.
(b) Weight of tops.
(b^1) Trade-price combing 1 pound tops.
(b^2) Cost of combing.

Form I is designed to show the work done, the cost of stock with the operating cost at trade prices and the ultimate delivery of the tops and noils. With the necessary changes a similar form, II, is used in the spinning room.

(a) Cost of tops from Form I.
(b) Trade prices for work each count.
(c) (d) Cost per pound in each count.

Form III for carding and spinning is also intended to bring out the cost at trade prices.

Form IV relates to the total cost of cloth and resembles the others in its adherence to trade prices.

IV—Piece Cost Book

Calculation No. .....
Piece Nos. .....Description .....
Cost of Material
Pounds warp at .....
Pounds filling at .....
Trade Charges for Processes
Sizing .....
Winding .....
Warping .....
Weaving and Putting up .....
Scouring and Milling .....
Mending .....
Finishing .....
Dyeing .....
Total Cost .....
....Per cent. for Pattern Making .....
Allowance for Discount .....
....Per Cent. for Warehouse Expenses and General Charges .....
....Per cent. for Profit .....
Selling Value .....
Yards finished .....
Cost price per yard .....
Sale price per yard .....

FORM-II

WORSTED YARN MAKING STOCK & COST BOOK

LOT..... QUALITY..... % YARN / % WASTE

DATE COMMENCED..... DATE FINISHED.....

TOPS REFERENCE NO	DESCRIPTION OF TOPS & PROCESS	POUNDS	PRICE OF TOPS & PROCESS	CASH COLUMNS	YARN PRODUCED		COUNTS	ISSUED	POUNDS YARN PRODUCED TOTAL	TRADE CHARGE FOR PROCESS
					DATE	POUNDS				
Combing Lot No	.... Tops		(a)				2/48s 2/36s			
	Roving & Spinning 2/48s 2/36s		(b)				COST PER LB (c) (d)			

The trade price is that which is expected and ought to be received for the work, but whether the work is actually done at or below this limit is another matter. It is customary to take out summaries periodically to show how the assumption is working out. The form V gives the framework for details which are filled in from other records.

If the departmental work is not being

done inside the mill at or below the cost if done outside, the inference is that the work is costing in the mill more than it should. The remedy is not to raise the selling-price and thus disqualify oneself in competition, but to reduce the cost price. The first measure is to discover the department in which the excess arises and the system aims at revealing responsibility for the fault.

A Trading Account is drawn up in two sections; to exhibit first any surplus earned upon goods sold over and above the cost of materials and wages; and in its second section to show standing expenses apportioned under their most important heads. The trading account is debited with stock on hand and in process, materials consumed and wages and it is credited with receipts from sales and stock remainng in process or on hand. In its second section standing mill expenses are displayed separately from standing warehouse and counting-house expenses and bank charges, discount on sales and bad debts all appear as separate charges.

FORM-III

WOOLEN YARN MAKING STOCK & COST BOOK

LOT..... QUALITY OR DESCRIPTION.....

DATE COMMENCED..... DATE FINISHED.....

STOCK REFERENCE NO	FROM WHOM PURCHASED	DESCRIPTION MATERIALS & PROCESS	POUNDS	PRICE MATERIALS & PROCESS	CASH COLUMNS	YARN PRODUCED			REFERENCE NO & POUNDS ISSUED	POUNDS PRODUCED	TRADE CHARGE FOR PROCESS
						COUNTS	POUNDS	COST			
		Black Wool Carbonized Black Waste Red Wool Scribbling Carding & Spinning	TOTAL	COST PER POUND							

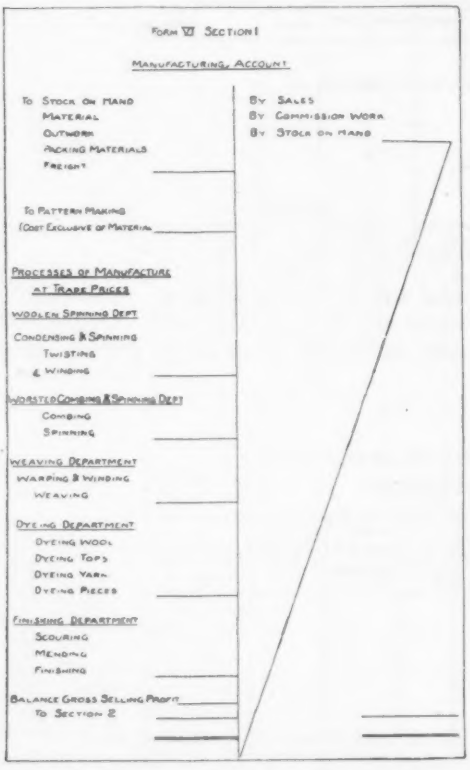
FORM V.

SUMMARY OF MACHINERY OR MANUFACTURING PROFIT ON WORK DONE IN THE DEPARTMENTS.

DEPARTMENT	WAGES	MATERIAL DYES CHEMICALS SOAP, SIZE &c	AVERAGE STANDING EXPENSES	TOTAL COST	TRADE CHARGES FOR WORK DONE	% WAGES ON WORK DONE	PROFIT	LOSS
WOOLEN CARDING & SPINNING								
WORSTED COMBING & SPINNING								
WEAVING								
DYEING								
FINISHING								

In a Department Account the respective earnings of the yarn and cloth departments are shown separately, each being debited with its own quota of materials, wages and expenses. It is, however, in the Manufacturing Account that the trade-prices are put to the touch. The account is presented in two sections, in the first of which the sale price less the conventional cost of manufacture gives the gross selling profit; in the second is shown the actual profits upon the individual manufacturing departments. A specimen form, VI, is given.

The distinction between the productive



and non-productive departments is maintained throughout and so is that between selling profit and manufacturing profit. This division has been so widely adopted that there is no question about its suitability to the conditions under which it is used. Theoretical arguments can be and have been brought against the method which has been accused of confusing the pure matter of cost, but its adaptibility to a wide range of circumstances has been proved by experience. Whether one gets some work of his own doen on commission, or whether he executes some commission work for others the system applies. There is every reason to say that it has helped some to discover leakages which had escaped detection hitherto. The system of taking a conventional cost simplifies the quoting of selling prices and facilitates an understanding between competitive firms. The actual costs of operation are measured against the market or trade charges for similar work and they are also measured from year to year against themselves.

OTHER METHODS

There is an opposition school averse to the system of trade-prices and it is sufficiently apparent that a system which may be best in our set of conditions is not so suitable in others. Suppose for instance that one is not a woolen and worsted cloth manufacturer, but a wool comber treating wools of different lengths and dependent upon a very small margin for a livelihood. The abrupt Form I evidently does not go into sufficient detail. The style of costing accounts given by G. H. Richardson and John Lund and shown at schedules A, B and C, are more to the purpose and are representative of some that are in use by English commission wool combers.

VII—COMBING COST, SCHEDULE A

Gross earnings .....
Prepared earnings .....
Carded and gilled earnings .....
Average price pe pound prepared .....
Average price per pound carded .....
Soap used .....
Soap, average per pack (240 pounds) of Top .....
Oil used .....
Oil, average per pack of Top .....
Wages paid .....
Wages, average per pack of Top .....
Net earnings per month .....
Net earnings per comb per hour .....
Net earnings per set per hour .....

COMBING COST, SCHEDULE B

Gross weight of Top .....
Gross Weight of Top Prepared .....
Gross weight of Top Carded .....
Average number of Combs .....
Weight per hour per comb, Combed .....

Weight per hour per comb, Carded .....
Number of hours worked, Combed .....
Number of hours worked, Carded .....
Engine hours .....
Possible hours .....

COMBING COST, SCHEDULE C

Weight of preparings .....
Average number of preparers .....
Weight per set per hour .....
Number of hours worked .....
Engine hours .....

The comber has to accept trade-prices or less for his work, whether he likes it or not and the schedule is constructed to separate from each other (1) prepared and combed (2) carded and combed (3) prepared only, with a view to showing which class of work is paying best. Whether the shed is a commission works or the property of a topmaker is all one to the manager, whose business does not lie with the profit on material, but only with the combing operation. Some classes of work are more regular than others and it is part of the manager's duty to cultivate those which keep him most steadily employed.

Whether a spinner is working his own material or not he keeps the Raw Material Accounts and the Machinery Account separate. In ordinary circumstances he is bound to the trade-price as effectually as the wool comber and many spinners find it unusual to have a manufacturing profit, although the trading profit may be satisfactory. A vital element in his success consists first in avoiding the production of waste and next in taking good care of his waste with a view to obtaining its highest market value. The practical counsellor never ceases to insist on the supreme importance of avoiding waste. The accountants think rather of the items.

FORM VI SECTION 2

MANUFACTURING ACCOUNT

To Warehouse & Office Standing Expense		By Gross Selling Profit (from Section 1)		
To General Charge				
To Net Profit on Trading Account		By Profit on Departments - Viz		
			Dr. Wages & Expenses as per Analysis	Cr. Work Done as per Section 1	Profit
		Woolen Spinning			
		Combing & Spinning			
		Weaving			
		Dyeing			
		Finishing			
		By Discount on Purchases			

Motive power.
Machinery materials.
Repairs.
Sundries.
Freight.
Wages and salaries.
Taxes.
Commission.
Interest.
Depreciation.

In costing cloth for the purposes of quotation it is customary to take the total cost of weaving at double the wage paid to the weaver and to treat this allowance as covering the auxiliary processes. Weavers are nearly always paid upon their output and the weaving wage is accepted as a sound foundation for estimates by accountants, who point out, however, that errors may be introduced where different sorts of cloth are produced. The same is true of a less used system which may be detailed as follows:

Pounds yarn at per pound = cost of yarn
Yarn cost ÷ pounds of cloth produced = cost per pound woven.
Yarn cost ÷ pieces of cloth produced = cost per piece woven.
Manufacturing materials .....
Motive power .....
Machinery materials, etc. .....
Total ..... $ .....

In a system proposed by Mr. Lund to meet cases in which goods of different kinds are produced, the charges are distinguished into Common, applying to the whole output and Special, allotted specifically to the particular class. The Common charges are arrived at by the following calculations:

Production in pounds × average yarn number = Hanks.
Total mill production in pounds ÷ total hanks = Average Count.
Labor and charges ÷ pounds produced = Average Cost per pound.
Average cost per pound ÷ by Average mill number = Cost per number.
Average in each class × Cost per number = Cost per pound of each class.

Special charges are added upon the same basis and in either case the cost per yard is obtained by dividing the cost per pound by the number of yards of cloth in one pound. The advantage of these alternative methods is not so apparent as seriously to disturb the simple practice of adding a definite proportion to the weaving wage and it is with the weaver's wage that other charges are compared in the following:

A system that is perhaps less used than it might advantageously be is known to exist in some English dyeing and finishing works where goods of widely different sorts are treated and idle time for parts of the plant is common. Every machine is rated after careful consideration at a certain working cost per hour. Every class of goods received is graded as requiring so many hours in each successive machine. On this basis prices are quoted and the rates are revised from year to year. The method facilitates calculation and diminishes a risk of error that is greatest when a large number of small matters have to be taken into account. The rating and grading cannot be mathematically accurate, but care is taken to keep on the safe side as a safeguard against contingencies which operate to make processes cost more than they should rather than less than one would think.

WEEKLY ABSTRACT

LOOMS WORKING	HOURS	PICKS PER LOOM PER HOUR	PICKS PER LOOM PER WEEK	AVERAGE WEAVER'S WAGE	TOTAL OTHER WAGES	WASTE %	PIECES WOVEN	REMARKS

ABSTRACT OF EXPENSES

ACCOUNTS	AMOUNT PER QUARTER	AMOUNT PER WEEK	NUMBER OF LOOMS..... PER LOOM	REMARKS	SAME PERIOD LAST YEAR PER LOOM

The exports of raw mohair from Bradford to the United States amounted, during last year, to $335,373, as compared with $232,174 in 1913.

A WOVEN FABRIC FOR FIRE HOSE

The fabric shown in the accompanying illustrations, which has recently been patented in this country, is intended for woven fire hose and is made on a circular loom. The object is to produce a fabric which has a minimum of longitudinal stretch when under tension, either caused by internal pressure or other forces, and also one which shall have a minimum tendency to twist when used as a hose carrying heavy pressure of water or other liquid.

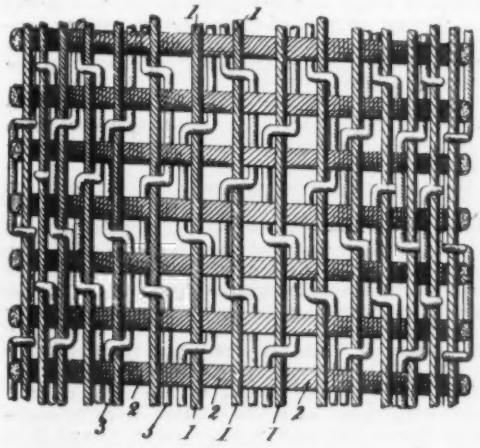


FIG. 1

The improved fabric is adapted for cotton fire hose which is usually lined on the inner surface with a layer or coating of rubber or rubber composition.

Fig. 1 is an interior view of a section of a tubular fabric cut on a longitudinal plane illustrating the arrangement of the yarn as it would be arranged in a hose, the strands of the yarn, however, being separated to show the relative arrangement more fully; Fig. 2 is a view of a piece of the completed fabric as it appears on the inner side of the hose; Fig. 3 is a view of a portion of the outer surface of the fabric of the hose; Fig. 4 is a longitudinal sectional view of the fabric as shown in Fig. 2; Fig. 5 is a transverse sectional view of the fabric as shown in Fig. 3.

Woven fabric for hose, as it has been made for many years, has consisted of longitudinal warp threads and transverse weft threads, usually termed the "filler". In the fire hose heretofore used the warp threads passed alternately over and under the filler threads, adjacent warp threads passing over and under different but consecutive filler strands. Owing to the fact that the warp threads in such hose take a waving or sinuous course in and out between the strands of the filler, the elongation or stretching under tension produced by internal pressure occurs to an undesirable extent. The elongation and greater tension on the yarn of the warp strands or threads produce a force opposite to that of the twist of the yarn and that causes the hose to twist as well as to elongate under pressure.

As distinguished from this construction,

FIG. 3

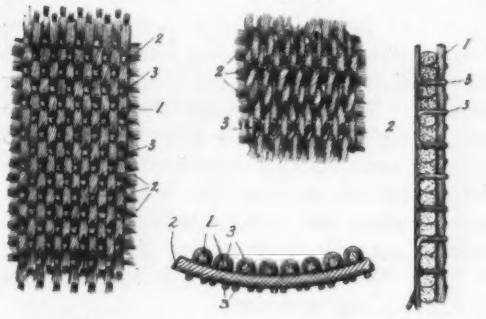


FIG. 2 FIG 5 FIG. 4

the improved fabric comprises main warp strands and filler strands which are substantially straight or smooth instead of being bent in and out between the corresponding transverse strands. Main warp threads, 1, extend lengthways of the fabric, and transverse filler strands, 2, extend around the fabric helically relative to the length of the hose. These two sets of strands are tied together by means of a third set of strands or threads, 3, which are in the nature of warp threads, but whose principal function is that of tying the main warp threads and filler together.

The binder threads pass between two adjacent strands of the filler and over the warp threads, 1, then between the same two strands of the filler, then beneath the next two strands of the filler, and then again over the warp in the opposite direction. If the

fabric is viewed from the outside, as shown in Fig. 3, the binder passes between two of the filler strands, over the next adjacent filler strands, then down between the next pair of filler strands, underneath the warp strands, again up between the same warp strands, over the next two adjacent filler strands and then down between the succeeding pair of filler strands. Between each single loop over a warp thread the binder passes on the opposite side of two of the filler strands. Adjacent binder threads alternate with each other as regards the pair of filler strands between which they pass. This gives the smooth surface on the inside of the hose, as indicated in Fig. 2.

In order to produce the effect shown in Figs. 2 and 3, the tension of the warp and filler threads is made considerably greater than has heretofore been practicable, the binder threads being of less tension so as to bind without distorting the other threads or strands. The arrangement also allows the successive strands of the filler and warp to be very tightly forced together. This is also facilitated by making the binder threads smaller than the warp threads. The filler strands may be made of any desirable size to give the requisite strength for any particular internal pressure.

—:—

ANTICIPATING THE CLOSE OF THE WAR

It is a well known fact that the introduction of the automatic loom in Great Britain has been far less rapid than in this country or even on the Continent. This is partially due to conservatism, but probably more largely to the opposition of trade unions than any other reason. It is not so much that the unions object to automatic looms as such, but their regulations permitting the number to be operated are so far below the capacity of any intelligent weaver that the advantages of the automatic loom are lessened in comparison with their full advantages under proper conditions. The war brings new conditions and some interesting points are brought out by Oscar S. Hall in an address delivered at the annual meeting of the Textile Institute at Manchester, Eng., in May, which is abstracted in "Cotton Chats."

[In his view the weaving industry of this country was on the eve of a great change. Many and various were the factors tending to weigh down the balance more and more to the advantage of the automatic loom. Not only were the technical advances, but the changes in social legislation and conditions were steadily ensuring that the automatic loom should come into its own.

Let them take the National Insurance Act: For 1,000 automatic looms they might assume 50 operatives were required; for 1,000 ordinary looms 200 operatives. At present within the weaving industry there was only Health Insurance; it was only a question of a short time when unemployment insurance would be added. The saving now would pay interest on part of the necessary greater capital expenditure, and on a greater part when the provisions of the Act increased their hold on the weaving industry.

To take the Workmen's Compensation Act: The charge was a percentage on wages, therefore there was a further saving on this score with automatic looms.

War bounties: The man with automatic looms had a less aggregate to pay in proportion to his production. The tendency also at present was for a higher remuneration of labor, and the possibility was increased of this tendency becoming effective by reason of a shortage. There was, owing to the war, a shortage of labor in many mills. Higher wages ever brought more labor-saving machinery into existence. Further, there was the possibility of allowing looms to run after the operatives had left the mill. About two years ago he stood in a small department of a mill. There were 60 automatic looms. A man and a woman attended to them; the man had 35 and the woman 25 looms. They went to dinner. He stayed behind. The looms were left running. In half an hour he counted the looms still running; there were forty!]

The automatic loom has given manufacturers of certain classes of goods in this country an advantage which has helped to offset the difference in cost of wages here and in England, but with business again on a peace footing, should there be a general adoption of automatic looms in England, those of our cotton manufacturers who are not so equipped will be less able to meet the English competition. We have as yet no national insurance acts, but we have in Massachusetts a Workmen's Compensation Act under which most manufacturers are insured, and as the premiums are based on the percentage of wages, Mr. Hall's argument on the advantages of the automatic loom in that respect is an interesting feature which is not always recognized in the consideration of this question.

"STRAIGHT LINE" TEXTILE CALCULATIONS

BY SAMUEL S. DALE

Textile calculations relating to yarn and cloth are based on a few standards of measurement for length, area and weight. Volume or cubic content is not involved.

Units of Length and Area

The inch and the yard are the standards used for measuring length and area.

Length. 1 yard=36 inches.

Area. 1 square yard=1296 square inches.

Units of Weight

1 pound=16 ounces=256 drams=7000 grains.
1 ounce = 16 drams=437½ grains.
1 dram =27 11/32 grains.
1 pennyweight=24 grains.

NUMBERING YARN

The size of yarn is indicated by the ratio or relation between length and weight. This relation is expressed either by the length of a fixed weight, as in the case of cotton yarn, of which the count or number indicates the number of 840 lengths per pound; or by the weight of a fixed length, as in the case of thrown silk, of which the count indicates the number of drams in the weight of 1,000 yards.

Unless otherwise stated, the count refers to the yarn as spun, or to the silk in the gum. For example, a finished cloth is said to be made of 3-run yarn if the size of the yarn was 3 runs when it came from the mule. The denier or dram count of silk yarn indicates the count of raw silk before boiling-off.

When expressing the count of ply yarn the number indicating the size is preceded by the number indicating the ply or strands of which the yarn is composed, the two figures being separated by a line. For example, "2/40s cotton" indicates a 2-ply thread composed of two strands of single No. 40 cotton yarn. This is the method used for all kinds of spun yarn, wool, cotton, linen, etc., except spun silk.

The second number as applied to spun silk ply yarn indicates the resulting count. Thus, "2/15s spun silk" indicates that the yarn is 2-ply and that the ply yarn is equivalent to No. 15, the count of the single strand being No. 30. Likewise "3/10 spun silk" indicates that three strands of single No. 30 yarn have been twisted together to make a thread equal to No. 10.

The two methods of indicating the size of yarn correspond to the two methods of indicating the weight of cloth, which is expressed either by the yards per pound, corresponding to the fixed weight system of yarn counts, or by the ounces per yard, corresponding to the fixed length system of yarn counts. Thus "10s" applied to worsted yarn indicates the length of one pound of yarn in hanks of 560 yards each, and "7-yard" applied to cotton cloth indicates the length in yards of one pound of cloth. On the other hand "5 dram" applied to thrown silk indicates the weight in drams of 1,000 yards of silk yarn; and "15 ounce" applied to woolen cloth indicates the weight in ounces of one yard of cloth.

By the first or fixed weight method the finer the yarn the greater is the length in a fixed weight, and, consequently, the higher will be the size number.

By the second or fixed length method the finer the yarn the less will the weight of the fixed length be, and, consequently, the smaller will be the size number.

In manufacturing loose masses of textile fibers like cotton, wool, flax, etc., into yarn the material is first converted into the form of a heavy sliver which each successive operation, including the final one of spinning, makes finer. The processes serve to increase constantly the length of a fixed weight, and yarn manufactured in this way is usually numbered by the length of a fixed weight to indicate the varying length.

Silk, on the contrary, is finest at the first stage when spun by the silk worm. In this form it is a very fine filament, of which one pound in the better qualities will measure 1,100 miles in length. In this form it is far too delicate for weaving. It must be made heavier and stronger for this purpose, and this is done by doubling and twisting a number of these silk cocoon filaments together.

Each successive process in the manufacture

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of raw silk into silk yarn makes the thread coarser. The length of the original filament remains the same. The processes of doubling thus increase the weight of a fixed length and silk yarn is numbered by the weight of a fixed length to indicate the varying weight.

Thus this size number grows larger for both spun yarn and silk as the process of manufacturing advances, although spun yarn becomes finer and silk yarn coarser.

Silk waste comes to the manufacturer in the form of a loose tangled mass of fibers and the yarn made from it is numbered, like cotton and woolen yarn, by the length of a fixed weight.

Following are the principal standards employed for numbering yarn by the length of a fixed weight:

	Material	Standard			
Anglo-American	Woolen	1600 yards	1 pound		
World	Cotton	840 "	1 "		
Anglo-American	Worsted	560 "	1 "		
World	Linen	300 "	1 "		
West of England	Woolen	320 "	1 "		
Yorkshire	Woolen	256 "	1 "		
England	Raw silk	16 "	1 "		
Anglo-American	Yarn of all kinds	1 "	1 "		
France	Cotton	992 "	1 "		(1000 meters ½ kilo)
Continent, metric	Woolen, worsted and spun silk	496 "	1 "		(1000 meters 1 kilo)

The principal standards for indicating the size of yarn by the weight of a fixed length are:

	Material	Standard
World	Silk	deniers per 400 aunes
Anglo-American	Silk	drams per 1000 yards
"	Cotton	grains per 120 yards
"	Various	grains per 100 yards
"	Woolen	grains per 50 yards
"	Woolen	grains per 25 yards
"	Woolen	grains per 20 yards
World	Jute	pounds per 14,400 yards

There are many standards employed locally on the Continent of Europe and in other parts of the world, but they are slowly being displaced by those given above.

The above table of fixed weight systems of numbering yarn gives the length of one pound of No. 1 yarn for each, but they can also be expressed by the length of any other unit of weight. Thus the run system indicates not only the number of 1600-yard lengths per pound, but also the number of 100-yard lengths per ounce.

Following are equivalent expressions for the different fixed weight standards for numbering:

Run System

1600 yards per 1 pound
100 yards per 1 ounce
1 yard per 4⅜ grains
8 8/35 inches per 1 grain

Cotton System

840 yards per 1 pound
52½ yards per 1 ounce
.12 yard per 1 grain
4.32 inches per 1 grain

Worsted System

560 yards per 1 pound
35 yards per 1 ounce
.08 yard per 1 grain
2.88 inches per 1 grain

Linen or Cut System

300 yards per 1 pound
18.75 yards per 1 ounce

West of England Woolen

320 yards per 1 pound
20 yards per 1 ounce

Yorkshire Woolen

256 yards per 1 pound
16 yards per 1 ounce
1 yard per 1 dram

Metric

496 yards per 1 pound
31 yards per 1 ounce
1000 meters per 1 kilogram

YARDS PER OUNCE

The number of yards per ounce is used in England to indicate the size of reeled silk. As this basis is 1/100th of the run standard (100 yards per ounce) it has not been considered necessary to include it in the tables of equivalents. The equivalents of the yards per ounce count can be obtained from the run equivalents by moving the decimal point two places. Likewise the run equivalents can, as is frequently done, be reduced to yards per ounce by the same method. Thus 20,000 yards per ounce is equal to 200 runs, and 7 runs is equal to 700 yards per ounce.

DENIER COUNT. (DENIERS PER 400 AUNES OR POUNDS PER 4,464,528 YARDS)

The world's standard for raw silk. Also used for thrown silk on the Continent of Europe. The denier and aune are old French units of weight and length.

The denier count of silk yarn is ordinarily indicated with a margin of 2 deniers to allow for the variations in the size of the silk. Thus 10-12 denier silk indicates that the average size is between 10 and 12 deniers.

Variations in the weight of the denier in different parts of Europe have given rise to what are known as the French, Turin and Italian denier systems. The difference between these standards is so slight as to be negligible in practice.

The Italian standard is now generally accepted and has been adopted as a basis for these calculations. It makes the denier count equivalent to grains per 638 yards.

Equivalents of the denier standard:

Deniers per 400 aunes
Pounds per 4,464,528 yards
Ounces per 279,033 yards
Drams per 17,440 yards
Grains per 638 yards
Demi-decigrammes per 450 meters

Because of its solidity the reeled silk thread is much better suited for indicating the size by the diameter than is yarn spun from other textile fibers. Calculations of the diameter of reeled silk from the specific gravity of the material have been made by A. Rosenweig, with the following results:

Deniers	Microns	Diameters per Inch
8	42	605
9	44	570
10	47	540
11	49	516
12	51	494
13	53	475
14	55	457
15	57	442
16	59	428
17	61	415
18	63	403
19	64	393
20	66	383
21	68	374
22	70	365
23	71	357
24	73	349
25	74	342
26	76	335
27	77	329
28	79	323
29	80	318
30	81	312

25,400 microns=1 inch

DRAM SYSTEM FOR SILK. (DRAMS PER 1,000 YARDS)

The standard for numbering thrown silk in Great Britain and the United States.

Pounds per 256,000 yards
Ounces per 16,000 yards
Drams per 1,000 yards
Grains per 36 4/7 yards

POUND FOR JUTE (POUNDS PER SPYNDLE OF 14,400 YARDS)

The world standard for numbering jute yarn.

Pounds per 14,400 yards
Ounces per 900 yards
Grains per 2 2/35 yards

REDUCING YARN NUMBERS FROM ONE STANDARD TO ANOTHER

The number of yarn by one fixed weight standard can be readily reduced to its equivalent by any other standard by means of the ratio between them. For example No. 1 cotton yarn measures 840 yards per pound; No. 1 worsted yarn, 560 yards per pound. No. 1 cotton is consequently equivalent to No. 1½ worsted. The cotton number is reduced to the worsted equivalent by multiplying by 1½, while

the worsted number is reduced to the cotton equivalent by dividing by 1½.

60s (cotton) × 1½ = 90s worsted
90s (worsted) ÷ 1½ = 60s cotton

Reduction of a yarn number from one fixed length basis to another is acomplished by simple proportion. For example a yarn weighing 40 grains per 50 yards would weigh double that amount, or 80 grains, per 100 yards, the reduction from the 50-yard basis to the 100-yard being accomplished by multiplying by 2. Conversely the reduction from the 100 yard basis to the 50-yard is effected by dividing by 2.

The reduction of yarn numbers from a fixed weight basis to a fixed length basis or the reverse is effected by dividing a constant number by the given yarn number. Let us assume that No. 40 cotton is to be reduced to grains per 120 yards. The cotton number indicates the number of 840-yard lengths per pound (7000 grains). As 120 is one-seventh of 840, it follows that the cotton number also indicates the number of 120-yard lengths per 1000 grains (1/7 pound). From this it is plain that the weight in grains of 120 yards is found by dividing 1000 (grains) by the cotton number (120-yard lengths per 1000 grains).

1000 (grains) ÷ 40 (cotton No.) = 25 grains per 120 yards

Below will be found the formulas for reducing yarn numbers from one basis to another.

RUNS. (1600-YARD LENGTHS PER POUND)

Used for carded woolen yarn. As the runs indicate the number of 100-yard lengths per ounce, the run system is practically identical with the yard per ounce system used in England for silk.

Equivalents:

Cotton No. × .52½
Worsted No. × .35
West of England No. × .20
West of England No. ÷ 5
Linen No. × .18¾
Linen No. ÷ 5 1/3
Yorkshire No. × .16
Yards per pound ÷ 1600
Metric No. × .31
525 ÷ grains per 120 yards
437½ ÷ grains per 100 yards
218¾ ÷ grains per 50 yards
109⅜ ÷ grains per 25 yards
87½ ÷ grains per 20 yards
9 ÷ Dundee jute No.
160 ÷ drams per 1000 yards
2790 ÷ deniers per 400 aunes

COTTON COUNT. (840-YARD LENGTHS PER POUND)

The world's standard for cotton yarn. Also used for spun silk.

Equivalents:

Runs × 1.905
Worsted No. × .66 2/3
West of England No. × .381
Linen No. × .357
Linen No. ÷ 2.8
Yorkshire No. × .305
Yards per pound ÷ 840
Metric No. × .59
1000 ÷ grains per 120 yards
833 1/3 ÷ grains per 100 yards
416 2/3 ÷ grains per 50 yards
208 1/3 ÷ grains per 25 yards
166 2/3 ÷ grains per 20 yards
17 1/7 ÷ Jute No.
305 ÷ drams per 1000 yards
5315 ÷ deniers per 400 aunes

WORSTED COUNT. (560-YARD LENGTHS PER POUND)

Used for worsted yarn.

Equivalents:

Runs × 2 6/7
Cotton No. × 1.5
West of England No. × .571
Linen No. × .534
Yorkshire No. × .457
Yards per pound ÷ 560
Metric No. × .886
1500 ÷ grains per 120 yards
1250 ÷ grains per 100 yards
625 ÷ grains per 50 yards
312½ ÷ grains per 25 yards
250 ÷ grains per 20 yards
25 5/9 ÷ Jute No.
457.2 ÷ drams per 1000 yards
7972 ÷ deniers per 400 aunes

WEST OF ENGLAND COUNT. (320-YARD LENGTHS PER POUND)

Used for carded woolen yarn in the West of England.

Equivalents:

Runs × 5
Cotton No. × 2 5/8
Worsted No. × 1¾
Linen No. × 15/16
Yorkshire No. × .8
Yards per pound ÷ 320

Metric No. × 1.55
2625 ÷ grains per 120 yards
2187 ÷ grains per 100 yards
1094 ÷ grains per 50 yards
547 ÷ grains per 25 yards
437½ ÷ grains per 20 yards
45 ÷ Jute No.
800 ÷ drams per 1000 yards
13,951 ÷ deniers per 400 aunes

LINEN COUNT. (300-YARD LENGTHS PER POUND)

The world's standard for linen and hemp yarn. Used in the Philadelphia district for woolen yarn and there called the "cut" system.

Equivalents:

Runs × 5 1/3
Cotton No. × 2.8
Worsted No. × 1.8 2/3
West of England No. × 1.0 2/3
Yorkshire No. × .85 1/3
Yards per pound ÷ 300
Metric No. × 1.65
2800 ÷ grains per 120 yards
2333 1/3 ÷ grains per 100 yards
1166 2/3 ÷ grains per 50 yards
583 1/3 ÷ grains per 25 yards
466 2/3 ÷ grains per 20 yards
48 ÷ Jute No.
853 1/3 ÷ drams per 1000 yards
14,882 ÷ deniers per 400 aunes

YORKSHIRE COUNT. (256-YARD LENGTHS PER POUND)

Used in England for carded woolen yarn.

Equivalents:

Runs × 6 1/4
Cotton No. × 3 9/32
Worsted No. × 2 3/16
West of England No. × 1 1/4
Linen No. × 1 11/64
Yards per pound ÷ 256
Metric No. × 1.94
3281 ÷ grains per 120 yards
2734 ÷ grains per 100 yards
1367 ÷ grains per 50 yards
684 ÷ grains per 25 yards
547 ÷ grains per 20 yards
56 1/4 ÷ Jute No.
1000 ÷ drams per 1000 yards
17,439 ÷ deniers per 400 aunes

YARDS PER POUND

The size of yarn is sometimes indicated by the number of yards per pound.

Equivalents:

Runs × 1600
Cotton No. × 840
Worsted No. × 560
West of England No. × 320
Linen No. × 300
Yorkshire No. × 256
Metric No. × 496
4,464,528 ÷ denier count
256,000 ÷ dram count
840,000 ÷ grains per 120 yards
700,000 ÷ grains per 100 yards
350,000 ÷ grains per 50 yards
175,000 ÷ grains per 25 yards
140,000 ÷ grains per 20 yards
14,400 ÷ Jute No.

METRIC YARN NUMBER (496 YARDS PER POUND OR 1000 METERS PER KILOGRAM)

This system of numbering is used on the Continent of Europe, principally for carded woolen and worsted yarn.

In France cotton yarn is numbered to indicate the number of 1000-meter lengths per half-kilogram (992 yards per pound, making the French No. equal to one-half of the metric).

Equivalents:

Runs × 3.22
Cotton No. × 1.693
Worsted No. × 1.129
West of England No. × .645
Linen No. × .605
Yorkshire No. × .516
Yards per pound × .002016
9001 ÷ denier count
516 ÷ dram count
1693 ÷ grains per 120 yards
1411 ÷ grains per 100 yards
706 ÷ grains per 50 yards
353 ÷ grains per 25 yards
282 ÷ grains per 20 yards
29 ÷ Jute No.

DENIER. (DENIERS PER 400 AUNES)

The world standard for silk.

Equivalents:

2790 ÷ runs
5315 ÷ cotton No.
7972 ÷ worsted No.
13,951 ÷ West of England No.
14,882 ÷ Linen No.
17,440 ÷ Yorkshire No.
9001 ÷ Metric No.
4,464,528 ÷ yards per pound
Grains per 120 yards × 5.31
Grains per 100 yards × 6.38
Grains per 50 yards × 12.76
Grains per 25 yards × 25.51
Grains per 20 yards × 31.89
Jute No. × 310
Drams per 1000 yards × 17.44

DRAM COUNT. (DRAMS PER 1000 YARDS)

Used for Thrown Silk.

Equivalents:

160 ÷ runs
305 ÷ cotton No.
457 ÷ worsted No.
800 ÷ West of England No.
853 1/3 ÷ linen No.
1000 ÷ Yorkshire No.
256,000 ÷ yards per pound
516 ÷ Metric No.
Grains per 120 yards × .305
Grains per 100 yards × .366
Grains per 50 yards × .731
Grains per 25 yards × 1.463
Grains per 20 yards × 1.829
Jute No. × 17 7/9
Deniers per 400 aunes × .0573

GRAIN SYSTEMS

Used for testing the size of spun yarn, roving, drawing, etc., also in knitting mills for numbering spun yarn.

Equivalents of Grains per 120 yards:

525 ÷ runs
1000 ÷ cotton No.
1500 ÷ worsted No.
2565 ÷ West of England No.
2800 ÷ linen No.
3281 ÷ Yorkshire No.
840,000 ÷ yards per pound
1693 ÷ Metric No.
Grains per 100 yards × 1.2
Grains per 50 yards × 2.4
Grains per 25 yards × 4.8
Grains per 20 yards × 6
Jute No. × 58 1/3
Drams per 1000 yards × 2.8 1/8
Deniers per 400 aunes × .1881

Equivalents of Grains per 100 yards:

437 1/2 ÷ runs
833 1/3 ÷ cotton No.
1250 ÷ worsted No.
2187 1/2 ÷ West of England No.
2333 1/3 ÷ linen No.
2734 3/8 ÷ Yorkshire No.
1411 ÷ Metric No.
700,000 ÷ yards per pound
Grains per 120 yards × 5/6
Grains per 50 yards × 2
Grains per 25 yards × 4
Grains per 20 yards × 5
Jute No. × 48.6
Drams per 1000 yards × 2.7 1/3
Deniers per 400 aunes × .1568

Equivalents of Grains per 50 yards:

218 3/4 ÷ runs
416 2/3 ÷ cotton No.
625 ÷ worsted No.
1093 3/4 ÷ West of England No.
1166 2/3 ÷ linen No.
1367 ÷ Yorkshire No.
350,000 ÷ yards per pound
706 ÷ Metric No.
Grains per 120 yards × .41 2/3
Grains per 100 yards × .5
Grains per 25 yards × 2
Grains per 20 yards × 2.5
Jute No. × 24.3
Drams per 1000 yards × 1.3 2/3
Deniers per 400 aunes × .0784

Equivalents of Grains per 25 yards:

109 3/8 ÷ runs
208 1/3 ÷ cotton No.
312 1/2 ÷ worsted No.
547 ÷ West of England No.
583 1/3 ÷ Linen No.
684 ÷ Yorkshire No.
175,000 ÷ yards per pound
353 ÷ Metric No.
Grains per 120 yards × .2 1/12
Grains per 100 yards × 1/4
Grains per 50 yards × 1/2
Grains per 20 yards × 1 1/4
Jute No. × 12.15
Drams per 1000 yards × .683
Deniers per 400 aunes × .0392.

Equivalents in Grains per 20 yards:

87 1/2 ÷ runs
166 2/3 ÷ Cotton No.
250 ÷ worsted No.
437 1/2 ÷ West of England No.
466 2/3 ÷ Linen No.
547 ÷ Yorkshire No.
140,000 ÷ yards per pound
282 ÷ Metric No.
Grains per 120 yards × 1/6
Grains per 100 yards × .2
Grains per 50 yards × .4
Grains per 25 yards × .8
Jute No. × 9.7
Drams per 1000 yards × .547
Deniers per 400 aunes × .0313

JUTE COUNT. (POUNDS PER SPYNDLE OF 14,400 YARDS)

Used for coarse jute and linen yarn. Sometimes called the "Dundee" jute count.

Equivalents:

9 ÷ runs

17 1/7 ÷ cotton No.
25 5/7 ÷ worsted No.
45 ÷ West of England No.
48 ÷ Linen No.
56 1/4 ÷ Yorkshire No.
14,400 ÷ yards per pound
29 ÷ Metric No.
Grains per 120 yards × .017 1/7
Grains per 100 yards × .020 4/7
Grains per 50 yards × .041 1/7
Grains per 25 yards × .082 2/7
Grains per 20 yards × .102 6/7
Drams per 1000 yards × .05 5/8
Deniers per 400 aunes × .00322

(To be continued)

ITALY PROMOTES THE SILK INDUSTRY

The Minister for Agriculture, Industry and Commerce of Italy, for the purpose of promoting and encouraging inventions of new methods and apparatus in the reeling and throwing of raw silk and the improvement of machinery already used for this purpose, has announced the following international prize competition:

First, a prize of $8,000 for methods of reeling based on new principles in order to decrease the cost; secondly, another prize of $8,000 for new methods which will increase the yield of silk from the cocoons; thirdly, a prize of $6,000 for a method of combining the several operations of reeling and throwing; Fourthly, a prize of $3,000 for mechanical improvement in the individual operations relating to throwing or twisting.

The time within which applications must be submitted is until June 30, 1917, for the first three prizes and December 31, 1915, for the fourth. Excluded from this competition are inventions already patented in Italy or other countries at the date of the announcement of this competition. Following is a copy of the decree of the Italian Government, announcing the competition:

The Minister of Agriculture, Industry & Commerce:

In conformity with Article 2 of the law of July 6th, 1912, No. 869, for the promotion of silk production and of the silk industry;

Having considered the convenience of stimulating and encouraging the invention of new systems and new machinery aiming at the technical and economic improvement of silk reeling and throwing, and at the betterment of the methods and apparatus already in use in said industries;

Upon the advice of the Council for the Silk Industry;

DECREES:

Article 1. The following international prize competitions are instituted;

1. One of 40,000 lire for the finding of new methods of reeling, including such as may be based on new principles or new means of unwinding the silk from the cocoons, and aiming to reduce directly or indirectly the cost of reeling.

2. One of 40,000 lire for the invention of new methods, whereby the yield of silk from the cocoons is increased.

3. One of 30,000 lire for the finding of systems combining the various operations of reeling or throwing.

4. One of 15,000 lire for technical or mechanical improvements in the single actual operations of throwing.

Article 2. Applications for the first three prize competitions may be entered up to June 30, 1917, and for the fourth up to December, 1915.

Article 3. Inventions already patented in the Kingdom or abroad at the date of publication of this decree are excluded from the above stated prize competitions.

Article 4. The specifications and apparatus entered for said competitions remain the property of the competitors; but the Government reserves the right of publishing, at the close of the competition, and in such manner as it may deem best, the specifications and drawings relating thereto.

Article 5. The prizes for competitions 1, 2 and 3 are undividable, and shall be assigned only to competitors presenting results entirely satisfactory. The prize established for the fourth competition may, on proposal of the Jury, who shall be guided in this matter by the results of the competition, be sub-divided in several prizes.

Article 6. In the budget of this Ministry for 1915-1916, under the Chapter corresponding to Chapter 148 of the budget of the current financial year, shall be appropriated a sum of 15,000 lire, to meet the payment of the prize of the fourth competition stated in Article 1.

Moreover, in the budget for 1917-1918, under the Chapter corresponding to Chapter 148 of the budget of the current financial year, shall be by competitions Nos. 1, 2 and 3 of Article 1.

The expenses of the jury and those for eventual trials and experiments, to be carried out with the various exhibits entered for the competitions above stated, shall be charged under Chapter 148 of the budget for the current financial year and under the corresponding chapters of the budgets for the future financial years.

Article 7. By decree, to be published later on, the supplementary regulations of the competitions above stated will be announced and nomination made of the jury for awarding the prizes.

This decree shall be registered at the "Corte dei Conti."

Roma, July 20, 1914.

G. Cavasola,
The Minister.

ENGLISH NOTES

By Our Regular English Correspondent

In most respects textile mill business remains much the same as in late months. The cotton trade has rather too little to do and most sections of it are on bad margins. The woolen and worsted mills are still making money fast and are finding adequate compensation in civil orders for any easing-off in army orders. Flax supplies have become rather more plentiful. For army and other services there is still a great demand for jute goods. Makers of small articles like respirators for wear in facing poisonous gases and makers of bandages have all the business they can handle. More or less everybody has difficulty in getting labor and everybody is affected by a new rise in coal which is computed to add about three dollars a year to the cost of running a cotton loom. Leather, oil and supplies as a whole become dearer and their quality in some cases becomes worse. As for dyewares, a dollar and a half and up has to be paid for colors that used to come in at ten cents and impatience at the delays in getting new supplies increases. Manufacturers are learning for the first time how many of the articles they want are made with the aid of materials that are required for war purposes.

Machine makers say that practically all the new plant that is ordered is wanted in direct or indirect connection with the war and many of them are as deeply engaged in military engineering as almost to be out of the textile business. War matters become more rather than less prominent and seem destined to consume more exclusive attention as time goes on. The entry of newcomers into the conflict brings in new orders for military goods. Recruiting shortens the labor supply at one end and the prospective transfer of workpeople into ammunition factories promises to curtail it at the other. Large bodies of people are becoming acclimatized to altogether higher wages and others are receiving a training that indisposes them towards resuming an indoor life. The relation of industries one to another is shifting, new lines of trade are gaining importance and it will be found doubtless in due course that others have lost. There can be no mistaking the greatness of the industrial upheaval which accompanies the political and military changes, although its full consequences are not yet to be read.

Outsiders are rather more confident than textile manufacturers that there is a good time coming for owners of machinery at the conclusion of the war. Much is to be said in favor of that view, for were the war to end quickly it would catch the consuming markets quite uncommonly bare of stocks of goods. While the war lasts there are obstacles of one sort or another in the way of bringing stocks up to their usual level and the idea is that there will be more buyers than sellers after the conclusion of peace. What with the restocking of the overseas markets and the clothing of the legions of people who will be employed in repairing the damage already done, it is argued that textile work will be brisk for years. Certainly textile business was very active for a few years after the Franco-Prussian war and if experience repeats itself in this case we shall have a great fall in values, succeeding a great rise; large and steady losses succeeding a period of high profits during which expenses of all kinds are raised to the top notch. The view may be the right one, but certain it is that those who have had to make readjustments accommodating them to the special exigencies of warfare will have to make new ones to fit the conditions of peace.

* * *

Mr. Lloyd George, explaining to business men his proposals to increase the output of munitions has expressed most strongly his desire to escape from red tape which "takes so long to unwind". The criticisms directed against the British purchaser of army goods have referred principally to red-tapeism and especially to keeping manufacturers idle for weeks before learning whether their price has been accepted or not. During these weeks every contractor has been buying or inquiring against every other with the result that all the time materials have been rising against the manufacturer and his customer. It has seemed to a great many manufactur-

turers that expense could be avoided by a buying firm letting the market rise after the goods have been bought instead of before. There is some reason to think that woolen manufacturers have been putting this principle into practice by buying collectively wool that is bound to be wanted. The arrangement is one that can be smoothly worked by any association of manufacturers that has the confidence of its members and any purchaser who will state his minimum requirements in advance. The material is bought in as it comes upon the market, is withheld from speculative hands and is eventually turned into cloth at a moderate profit.

* * *

An observation upon American export trading that is made in a British consular report deserves attention no less because it tallies with advices from some other quarters. The mention comes from Vice-Consul Bowle of Bogota who remarks that American cottons make headway in the Colombian market especially in years when raw cotton is high in price. The goods are apparently the surplusage of the domestic market and they are sold in place of Manchester cloths. However, the business does not stay for the reason that the consumer sees the same brands and makes in every store and the importer thus cannot make the same rate of profit as upon articles that he has more to himself. Goods of pronounced fancy character proclaim their own identity and the only way to avoid clashing lies in presenting a variety. In the case of plains the advantage of the Manchester system comes in. The cloths bear the brands not of the maker, but of the shipper and every shipping merchant has his own extensive variety of marks. Thus even if the goods in different stores are the same the appearances are different and regard is paid by the seller to the quantity and distribution of goods of one mark. The circumstances are detailed without reference to the general advisability of leaving the branding to the middleman. The instance is simply one out of a number in which customers prefer variety if they can get it.

* * *

There is a general presumption that industrial research means something or other connected with chemistry, although the posabilities are not limited to that science. Apparently it will depend somewhat upon the exertions of textile manufacturers to decide whether any large share of the new Government grant for research shall be laid out upon specifically textile problems. A new advisory council has been set up to administer the expenditure of an initial $150,000 and a regular revenue is to be provided. Work described as research is undertaken in a small way in the laboratories of the larger textile schools, but the heads of these institutions have their hands pretty full of teaching and the assistants are commonly too poorly paid to have time for unremunerated exertions. The objects of research have in some cases been of a rarified nature, not bearing an obviously close relation to practice and have led to few memorable discoveries. It is, however, probable that at the expense of a certain amount of thought and money certain useful sets of deductions could be drawn from systematized experiments and the textile industry has claims upon the physical as well as upon the chemical side of laboratory work. The first requisite would seem to be to determine what manufacturers most especially desire to know and every department has problems that have not been explored to the bottom. Increased attention to industrial research is of course one of the fruits of the war and a sign of the universal resolve not henceforward to depend as strongly upon Germany.

Public research is one thing and private research is another, but for the time being we have both. Industrial chemists show a new curiosity in ascertaining what is wanted with a view to manufacturing to meet current needs. The time is not a propitious one for buying plant or reagents but there is a healthy stir of enterprise that has led to discoveries of at least temporary importance and that ought to carry farther.

The embargo upon the export of crossbred wool and yarn even to the Allied countries has again been stiffened and is being put rigorously into force. Yarn is only allowed to go when a certificate is furnished by the authorities in the Allied country and pleas that the yarn is already manufactured and in counts and twist unsuited for army use now count for nothing. This husbanding of crossbred material at a time when the Government is out of the market is the visible sign of the possibility of a winter campaign requiring practically unlimited quantities of cloth. As there are no data to show how Government stocks stand there is plenty of room for uncertainty about the future. For the present the trouble is to get wool through the combs and one department is waiting on another. Neither are there enough combs for the present need, nor enough people forthcoming to man them. In the event of a large new flush of Government orders it will be within the power of the authorities to have all private business put aside under the laws that have been passed to meet the emergency. But as British production is more likely to decrease than increase in view of the dearth of workpeople, there should be further chances for neutrals to supply goods.

* * *

It appears that cotton yarn and cloth are those which hold up best in the list of sendings to the United States, excepting the minor article, carpets. And cotton piece goods show a decrease of 25 per cent. as against the first five months of 1914. The

Exports U. K. to U. S.

Five Months Ended 31 May

		1914	1915
Cotton yarn	lbs.	2,712,300	2,226,900
Cotton piece goods	yds.	27,657,300	20,108,300
Worsted yarn	lbs.	846,200	402,000
Woolen tissues	yds.	3,293,200	1,633,300
Worsteds and stuffs	yds.	14,027,600	9,362,900
Carpets	sq. yds.	191,800	212,900
Spun silk yarn	lbs.	335,091	221,321
All silks, broad	yds.	104,255	62,877
Mixed silks, broad	yds.	600,840	294,601
Jute yarn	lbs.	1,034,600	69,500
Jute piece goods	yds.	29,356,700	18,478,900
Linen yarn	lbs.	1,220,900	774,000
Linen piece goods	yds.	54,458,500	34,780,600

woolen tissues appearing in the first of the two tables below, showing a 50 per cent. decrease in quantity, are of an average value of 88 cents. The worsteds and stuffs classification, including two widely separate classes, average 34 cents a yard. The silk yarn trade feels the fall in quantity, combined with the fall in values, somewhat oppressive for the American market is its chief one oversea.

Shipments to America during May have been perceptibly smaller than during April. A comparison is given in the following table:

Cotton piece goods	yds.	4,596,200	3,688,600
Worsted yarn	lbs.	53,900	17,600
Woolen tissues	yds.	330,000	255,300
Worsteds and stuffs	yds.	1,765,300	1,336,900

It is natural to connect the decrease in cotton goods rather with American than British conditions and in respect of woolens and worsteds it is necessary to consult the effects of the embargo, the rise in prices and the preoccupation of English manufacturers with other work.

A COTTON SPINNING AND WEAVING MILL

From Uhlands Technische Rundschau

Translated from the German by the Editor of the Textile World Record

It is a well known fact that a weave room equipped with automatic bobbin changing looms can be operated to the best advantage only when it is connected with a spinning mill. The quality of the yarn plays an important role in the production of plain goods on automatic looms. The advantages of the automatic machinery are fully developed only when the yarn is of high grade and free from imperfections. The increased cost of the raw material is more than offset by economy in the cost of weaving and there is the further advantage of a better and more durable fabric.

The accompanying plan shows a cotton spinning plant connected with a weave room equipped with 384 automatic looms. The spinning machinery is designed to supply the requirements of the looms and consists of 9,316 ring spindles for 16s to 36s warp yarn and 20s to 36s filling yarn. The mill is one

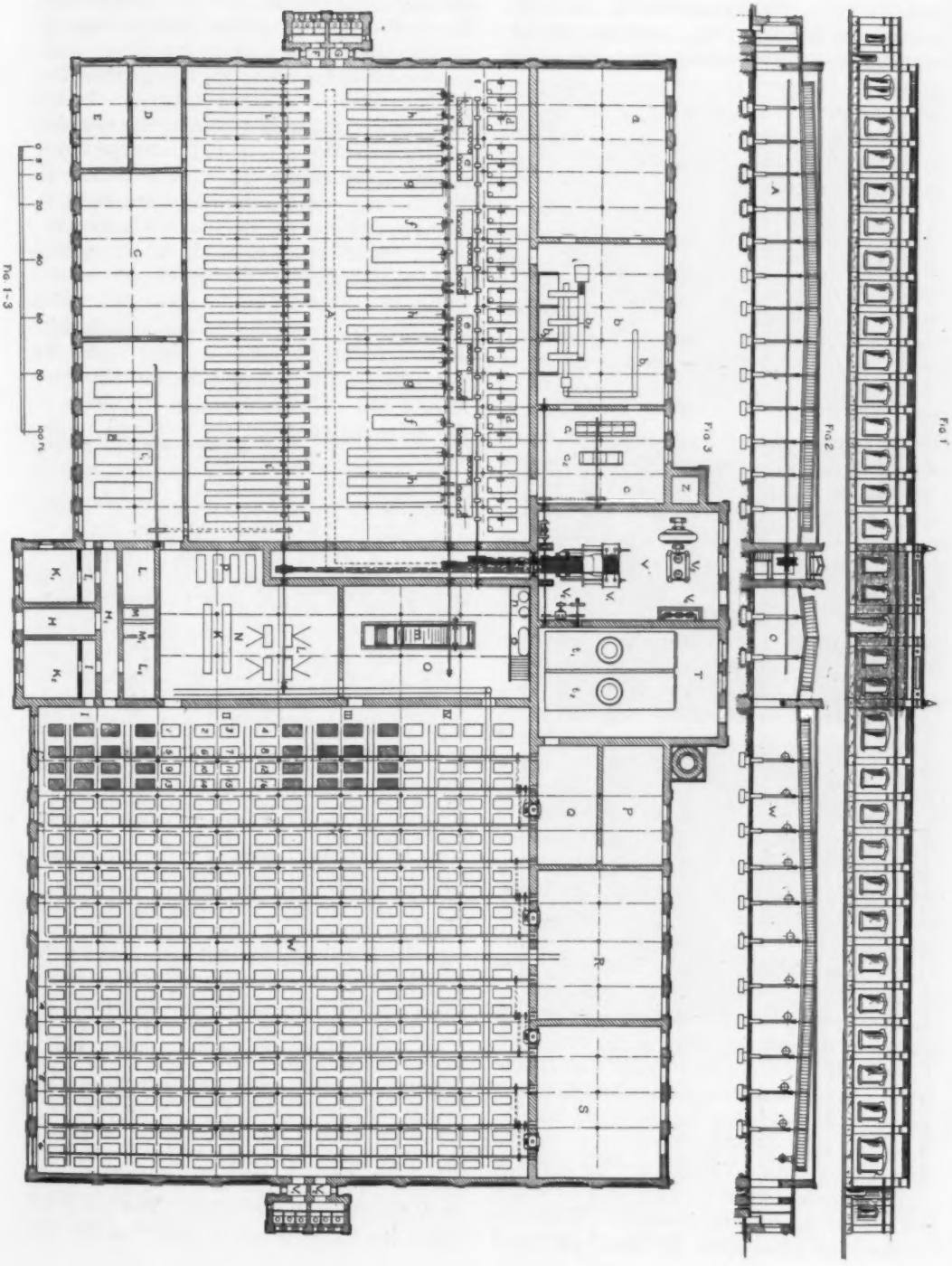
Fig 1-3
Fig 3
Fig 2
Fig 1

story throughout as shown in the plan and extends from a central section in which the beltway is located. Fig. 3 shows the arrangement of the different departments, which is designed to reduce the labor of transportation and economize in the cost of handling the material. The space is utilized to the best advantage and the machines so as to meet all requirements.

The raw cotton is first stored in the warehouse where the hoops and bagging are removed from the bales and it is then mixed for the picking process. There is a bale breaker and a mixing lattice so arranged that the cotton is delivered to any desired part of the mixing room. The cotton is then passed through the bale breaker, then by a vertical apron to the lattice apron at the ceiling whence it is transported in all directions as required. At the end of the feed lattice, near the mixing bins, is a porcupine opener which opens and cleans the cotton before it is delivered to the vertical opener. In the adjoining cleaning room are a double cotton opener, c^1, and a single beater, c^2. The dust is sucked from these rooms underground to the dust tower, z. The laps are delivered to the carding room which is located inside the first row of posts in the room, A, where 22 carding machines, d, are placed. The cotton is double carded for fine yarn and single carded for coarse yarn.

Four drawing frames, e, are placed next to the cards. These drawing frames have five deliveries. Six ends are doubled for warp yarn and pass through four drawing heads, coarse, intermediate and fine, to the ring spinning frames. The filling takes the same course except that it is passed through three drawing heads. There are three coarse frames, f, each with 70 spindles of 8 inch gauge; 3 intermediate frames, g, each with 116 spindles of 6 1/2 inch gauge and 11 fine frames, h, each with 152 spindles of 5 inch gauge. The drawing frames stand lengthways of the spinning room, the spindle frames crossways. There is a wide alleyway in the spinning room on each side of which are placed the 27 ring frames, i. Fourteen of the ring frames are for warp yarn and have each 320 spindles of 2 5/8 inch gauge, making 4,480 spindles for 16s to 36s warp. There are 13 ring frames which with 372 spindles of 2 1/4 inch gauge for filling, make 4,836 spindles for 20s to 36s filling yarn. The total number of spindles is 9,316. In the front part of the wing adjoining the spinning room are the reeling room, B, storage room, B, and general storage rooms, D and E. The reeling room contains three reels, i^1, with 200 spindles each of 4 1/2 inch gauge.

The main entrance, H, is in the central section of the mill. On either side of this entrance are the offices, K^1 and K^2, which are separated from the passageway, H^1, by the anterooms, I and I^1. Next come the wardrobes, L and L^2, and the weave rooms, M and M^1. The passageway, H^1, leads to the spinning room at the left and to the weaving room at the right. Access to the warp preparation room, N, is obtained from either the spinning room or the weave room. The yarn is taken from the yarn room, C, part of it going to the warp preparation room and the remainder direct to the looms. The filling is transported by small trucks which can pass between the rows of looms. The warp preparation room, N, has two warp spooling machines, K, each with 200 spindles and four warping machines, L, and several twisting-on and drawing-in frames, p. The warp beams are placed in the slasher, m, located in the slasher room, O, which is large enough to accommodate another machine.

In the slasher room, O, the sizing and mixing apparatus, n, and the water tank, o, are located at one end close to the boiler room in order to get a good supply of steam. The full beams are carried by trucks to the looms in the weave room, W. The weave room has 384 automatic looms which are arranged in groups of 16 each. There are 24 looms one way and 16 the other. The looms in group 11 are so arranged that the weaver stands between looms 1 and 5 and between 9 and 13, while a wide alleyway is between 1 and 2 as well as between 3 and 4. This arrangement enables the weaver to keep watch of the work in all the looms. The space between the looms is not so great but that the

weaver can quickly reach any loom when occasion arises. The cops and bobbins can be easily placed on the spindles as each row of looms is equipped with a frame for this purpose.

In the center between two of the principal groups of looms is a wide passageway with the principal frame for the bobbins and cops. The cloth room, R, contains an examination table and measuring machine. The goods are finally stored in room, S, ready for bleaching. In the central section of the mill are two repair shops, P and Q, adjoining the boiler house, T. The looms are 56 inches wide throughout.

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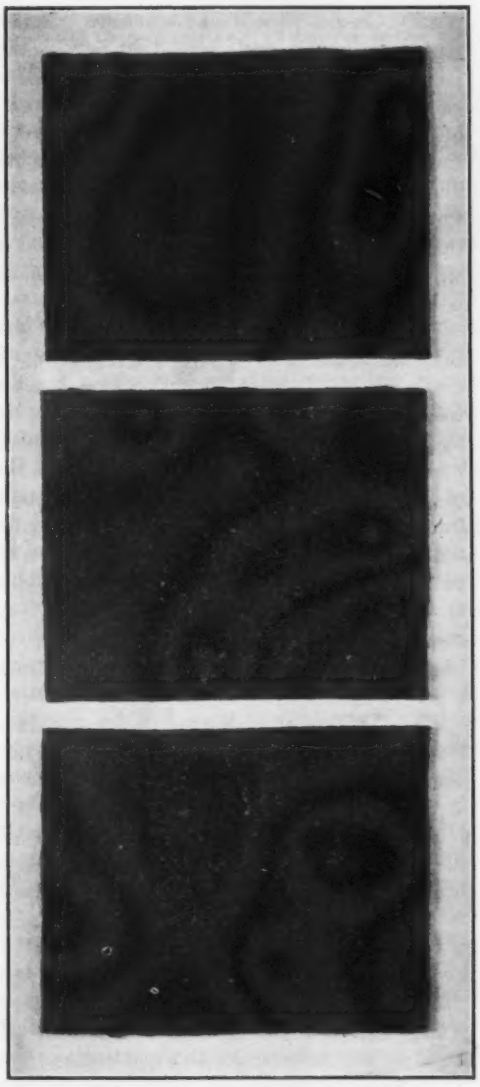
FANCY CUT FACED WOOLENS

BY WESSEX

The production of fancy effects upon the face of plain woolens is being done to some extent on the ordinary shearing machine, of which the features are well enough known to require no detailed description. In its simplest form the machine is one for passing cloth, held under tension, between a cutting part and a bed. The cutting part consists of steel knives twisted spirally around a steel cylinder, the knives being retained in position by holding screws at either end. These knives revolve in close contact with a ledger plate or straight knife, very accurately fitted and ground in contact with the moving knives to a beveled edge. Beds known as hollow, rubber, spring or solid, afford more or less play in avoiding the cutting of holes in the cloth at any thick place caused by a knot. The cutters are stationary and the cloth travels at some such rate as 20 yards per minute. Except that the object cut is a moving one the principle of operation is identical with that of the lawn mower or the safety razor.

The ordinary shearing machine having a plain ledger plate crops the whole width equally and the machines, as made by Sellers & Co., Huddersfield, England, are constructed to take cloths up to 66 inches. It will readily be understood that portions of the face of the fabric may be left unshorn by providing indentations in the ledger plate. The face is cut where the revolving knives come into touch with the plate and not elsewhere; and upon the common machine, in which the cloth runs at right angles to the



SAMPLES OF FANCY CUT FACED WOOL GOODS

cutter, indentations of the plate produce stripes. Cut stripes can be easily and expeditiously produced, but the method has certain drawbacks. A separate cutting-part is required for every change of pattern, for it

is intolerably expensive to grind together the old spirals and the new ledger whenever a change of pattern is required. Each cutter is useful only for its own pattern and to keep a variety of them adds materially to the cost of the machine. The machine, complete with one cutter, costs probably $275 f. o. b. Liverpool and the extra cutters about $110 each. Cutters are easily liable to damage in any case, for a tenterhook or a skewer in the cloth does $40 or $50 damage in a moment. The indented blades, especially when the indentations are close together—as in the production of a small pattern—are often snipped in grinding and the risk of breakage is difficult to avoid.

A stripe produced by the grooved blade may be made into a check by passing the cloth under a plain cutter. The machine used is fitted with a lifting motion so that the cutting is not continuous, but is done in rows across the piece. A special machine can, however, be had to give not only stripes, but diagonals and check and lozenge patterns in a considerable variety with the use of but one or of a few blades. The machine is made 96 inches wide and its straining rollers are adjustable so that the cloth may be fed to the cutter at any angle up to 45°, either to the left or to the right. Thus in successive passages lines can be chased in the cloth in two directions. By the use of tappets or eccentrics the cutter can be raised at intervals, leaving a portion unshorn. Using changes of eccentrics and adjusting the rate of feed a variety of effects are obtained with few changes of the knife. The machine is more expensive and would cost probably $770 at Liverpool. The cost is greater than English manufacturers have chosen to incur in view of the business offering and the doubtful permanence of the fashion for effects of the particular kind They have preferred in most cases to send out their pieces to be cut on commission by a firm equipped with the necessary machine. Some specimens of work done by Holroyds, Limited, of Leeds, are sent herewith.

To a limited extent the dualizing machine is being used in England to produce face effects upon soft woolen cloth. A manufacturer who had delivered one piece of goods to his customer was asked for another. Both had been treated in the same way, so far as was known, but the second piece was returned with the message that a twill face was wanted, like the last. Investigation showed that the first piece had been wrapped in a new wrapper, woven with a prominent twill, and the rib had embossed itself on the fabric without attracting notice in the mill. Wrapper cloths are now selected for this especial purpose and are effective for a short time. When the twill has been subdued by repeated steaming the wrappers can be taken for use on goods to be finished plain, so that the result is got with exceeding economy. [The samples accompanying this article can be seen at our Boston office.—Ed.]

PHILIPPINE WOOL GOODS FOR KHAKI

Manila Daily Bulletin, April 20

A few months ago a local live stock raiser, through Connor & Mason, disposed of a shipment of native wool on the London market at 37 centavos per kilo (8 2/5 cents per pound).

This wool was somewhat above the average native fleece in quality, however, and the shipment was sold just previous to the outbreak of the war when conditions were normal. Since that time there has been created, as a result of the war, a keen demand for coarse wools for the manufacture of blankets and khakis, and under war conditions the same wool would have brought nearly double the price received.

The fleece of the average native Filipino sheep, because of its extremely poor quality, is unsuitable for ordinary textile purposes, but it seems that it may be used to good advantage in the manufacture of the above-mentioned articles.

Although the average Filipino farmer keeps but a few head of sheep there are a number of comparatively large herds in various parts of the islands, and even the small growers of a given district could combine their output and make up lots sufficiently large to warrant shipment.

Farmers who may be interested in this matter are advised to communicate with the Director of Agriculture for particulars.

Questions and Answers

Under this head we undertake to answer, free of charge, to the best of our ability, questions pertaining to textile matters received from any regular subscriber to the TEXTILE WORLD RECORD. Questions should be stated as briefly and concisely as possible. Inquiries pertaining to textile processes, machinery, improvements, methods of management, the markets, etc., are especially invited, as well as any legitimate discussion on the views expressed. All inquiries must be accompanied by the name of the person inquiring, not for publication, but as an evidence of good faith.

If the question is not of general interest to textile readers and involves expensive investigation, a charge covering the cost may be made, of which the inquirer will be advised before any expense is incurred.

PRESSING SILK SWEATER COATS

Editor Textile World Record:

After finishing silk sweater coats should they be pressed, and if so, what is the method used?

Columbia (2467).

Silk sweater coats should not be pressed after being finished. The only process I know of to finish silk sweaters is steaming, which most manufacturers of silk sweaters are using today. A ten-gallon galvanized tank is built with a 2-inch pipe across the top, extending on both sides about 14 inches, as shown at Fig. 1. A 1/4 inch slot runs across the pipe for about 12 inches. The

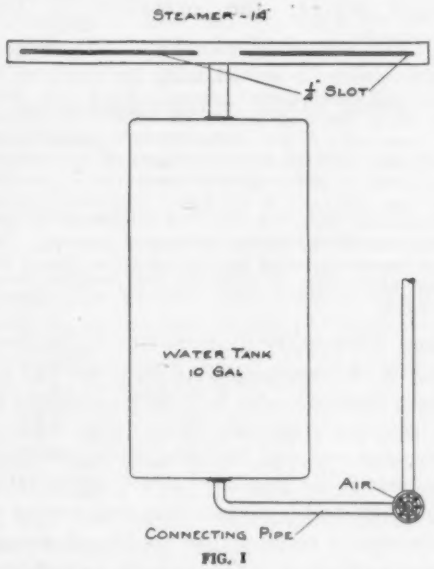


FIG. 1

water is heated and the steam forced through the slot in the pipe. After the sweater coat has been finished it is well to fold the coat as if ready to box. Hold the coat over the jet, first on one side and then on the other, allow about one minute for each side of the coat so that the steam will penetrate. If a press is used it is apt to leave the coat with a wavy or crimpy appearance and a poor luster. The steaming process gives the goods a soft handle and a fine luster, which improves as the goods lie in storage. Especially is this true where one end of wood fiber silk and one end of real silk is used. Having made these goods for some years and giving the presses a fair trial, I am convinced that steaming is the only method by which good results can be obtained.

Taconic.

I would advise pressing silk sweater coats after finishing and would recommend the following method: Dissolve 1 tablespoon of fine salt in two quarts of tepid water. Soak a linen cheese cloth that is free from starch in the water, squeezing quite dry. Place the sweater on a large ironing board and with the coat buttoned pull it into shape. Brush out the wales with a fine brush and press the garment with the cloth quite dry, using a common flat iron. Care must be taken not to have the iron too hot or the cloth too dry, otherwise the luster will be poor and the fabric will be set. It is best to box the sweaters as soon as they are pressed. Sweaters pressed in this way will retain their original knitting length and will not shrink. This process can also be used for silk underwear. I have used this method in one of the best mills in the East on high grade sweaters and underwear with good results. It saves the yarn as it was not necessary to allow but a small percentage for shrinkage.

Avoca.

This is a problem that each mill should solve for themselves. There are so many different kinds of stock that are called silk and which require different methods of treatment to bring out their luster, that it is diffi-

cult to give a satisfactory reply to the question. Pressing changes the rish luster of silk to a shiny effect. No sweater coats should be pressed either hot or cold as this will spoil the luster of the yarn and also crush the stitch. I have found from long experience that pressing does more harm than good to the general appearance of the goods. Delaine.

DYEING WITH LOGWOOD

Editor Textile World Record:

I have been making a cheap piece dyed all cotton warp, filling 50 per cent. wool stock and 50 per cent. cotton. This I have been dyeing a dark blue like sample enclosed. Can this be duplicated with logwood and if so, I would like a good recipe for same or any shade near it? Dyer (2473).

For a dark navy blue shade on piece goods, 50 per cent. cotton warps, 50 per cent. wool stock, the following formula is recommended:

Mordant goods first with

Chrome	.125%
Oxalic Acid	.50
Alum	.25
Bluestone	.10

for one hour at a boil. Then enter into a logwood bath which is kept separate and standing as per percentages given below. Logwood and soda ash are added first, goods entered and run for a few minutes, then bluestone is added and run for an hour and a half at 110° F. The depth of shade can be decreased or increased by lowering or raising the temperature of the dyebath.

Baths	1st	2nd	3rd	4th
Extract Logwood 51° (not Hemantine)	40%	30%	30%	20%
Textile Soda	12	8	4	4
Bluestone	6	4	2	2

Moreau.

POWER FOR DRIVING MACHINERY

Editor Textile World Record:

Will one horse power motor drive a Geo. D. Mayo machine, 1 Wildman ribber and a German looper? Power (2468.)

It is our opinion that one horse power would drive the Mayo machine, Wildman ribber and German looper, but we would consider it was working very close. In using the 1-horse power motor all three machines could not be started at once and we would suggest having a little larger motor as it would be more satisfactory.

Wildman Mfg. Co.

BUNTAL FIBER

Editor Textile World Record:

Can you give us any information in regard to Buntal fiber and Buri raffia, that is, its origin, quantities, prices and uses? Wayburn (2475).

Buntal fiber and buri-raffia are products of the Phillipine Islands, and although very different in appearance, both are derived from the Buri-palm, known in India and Ceylon as the Talipot palm (Corypha). Buri-raffia is prepared from the young, unopened leaves of this palm, the fiber consisting of the epidermis, for the most part stripped from the upper surface immediately after the leaf-bud is taken from the tree—leaf-buds of young trees usually being selected. According to Mr. Dewey, fiber botanist of the Agricultural Department, the coarsest strips are made by separating the segments from the mid rib, and drying them in the sun, a higher grade of material being obtained by boiling in water. Buntal fiber is obtained from the petioles, or leaf-stalks, of the unopened leaves; the operation is thus described:

"The petiole is cut off from the trunk at its base, and divided into pieces 3 to 4 feet long. The sharp, black spines on the sides of the petiole are removed. A few inches of the epidermis on both sides near the base is scraped off and the exposed end is thoroughly beaten with a wooden club until the ends of the fibers separate from the surrounding pulp. A strip of epidermis is then partly turned off from the upper surface. The fibers are then pulled out, a few at a time. The buntal fibers vary in diameter, the youngest being the finest."

Buri-raffia is chiefly employed in the manufacture of coarse bagging and mattings for baling purposes As it is finer, lighter and not so strong as the Madagascar raffia of commerce—as well as being more costly—it could hardly be employed as a tying material for florists and horticulturists, and, owing to its fineness it could not be used to advantage in the making of fancy baskets—which was quite a fad in this country a few years ago. Buntal fiber is employed in the braiding of hats, the Lukban buntals now having made a place for themselves, being regarded by those who have worn them as superior to the better known Panama hats of the shops, one peculiarity being their extreme lightness. Among other products of the buri-

palm may be mentioned cigarette cases and cigar holders.

Regarding the talipot palm of India Dr. Geo. Watt makes no mention of the extraction of either form of fiber, but states that the large fan-like leaves are made into fans and mats and are also used for thatching; on account of their strength and durability they are also used to tie the rafters of the native houses.

A very much better and whiter raffia, like fiber and vastly superior as to strength, is produced from the great Macan palm, or Corojo palm, of Cuba, and also found in Brazil, a species of Acromia. The strands of fiber, as extracted from the epidermis of the leaves, present a ribbon-like appearance, but by rubbing between the hands can be subdivided into filaments of great fineness and of surprising toughness. Dr. Morris said of it: "It is a remarkable fiber, and in point of tensile strength it surpasses even the fiber of the oil palm of Africa (Elais)." It has been known to fiber experts since the early seventies. Charles Richards Dodge.

BLEACHING COLORED WOVEN GOODS

Editor Textile World Record:

What are the best methods of bleaching colored woven cotton goods? Mayfair (2445).

Colored goods should be boiled in an open kier. They should be well covered with liquor, which should be well circulated through the goods. The boiling solution should be as follows: 1 1/2 per cent. soda ash, 1/2 per cent. of either Turkey red oil or olein oil. Boil for 10 hours, then wash well and bleach at 1/2° Tw. with sodium hypochlorite. Work in this solution for 2 to 3 hours. Then wash well and sour with muriatic acid at 1° Tw. for two hours. Wash well and then finish. Great care should be taken in bleaching this class of goods as a great deal of damage can be done in a short time. Morocco.

"Mayfair's" question is rather indefinite, as the methods of boiling and bleaching colored goods vary a great deal. If the colors are mixed in the woven goods a system can probably be worked out for handling them properly. I would advise boiling all colored goods in an open kier and not under pressure, as a boil under steam pressure is generally too severe for the colors. Turkey red, if a good one, will stand boiling in ash only, with chemic as the bleaching agent. They can also be soured, but must not be left in the sour bath, otherwise the color will run and if left too long in the chemic bath the color will evaporate altogether. Turkey red will not stand the lime boil. The handling of green and blue headings will depend on the kind of dye used and the process of dyeing. If a good green is used it will stand both the lime and ash boil, but blue will not stand the lime and should be used only in an ash boil. As a rule both these colors will stand the sour, but the chemic must not be very strong and the goods have to be watched very carefully while in the chemic bath.

Goods dyed with orange and yellow are very difficult to bleach without spoiling the shade. When they are put in the bleaching process it is generally the custom to hang the headings out of the kier when plating them in and then throw the ends on the top of the kier for the boiling process. The same thing is done in the chemic bath and if there is any sign of the colors commencing to run, the goods are immediately washed by hand to take out the chemic. This also applies to headings in which gold appears, especially nainsooks and mulls. These goods have to be treated with great care throughout the process, otherwise the gold will turn black or fade.

Black and dark blue are difficult to handle. If the colors run they will show up very dirty and streaky in the piece. A few years ago we had a large order for scarfs with a double black border and a double black heading every four yards, the border running down each selvage. We also had some dark blue and black. We had a very hard time to show clear headings and borders. We could not hang anything out in the kier and when we drew the liquor off it was like ink. The colors in the goods did not seem to be much weaker, however, and we ran them out of the kier with a good wash into a chemic bath a few at a time, and then rushed them through the sour bath and mangled them at once. We

had to dry them up as quickly as possible to stop the colors from running into the white.

If the goods "Mayfair" is to bleach are woven goods with various colors, such as checks, plaids or stripes, he will have to take into consideration the shades, the dyeing of them and if the colors will stand bleaching. The only advice I can give in this case is to use an open kier with weak solutions of bleaching and boiling drugs and handle the goods as quickly as possible, taking care in the chemic and sour baths. Handle the goods in small lots so that they can be picked up easily and washed off. I do not mean in small kier lots. If a 3-ton kier is used put in three tons, but cut up in small lots for handling quickly after the boiling process is over. Dulcimer.

TEXTILE SURNAMES

Editor Textile World Record:

Names afford very interesaing material for study. I have a notion that my own comes in some way from cloth. Is this correct?

Lister (2477).

Textile processes have given their names to innumerable families and certainly to the Listers, who owe their name to some ancestral connection with dyeing. "Dyed, litted and coulered" were interchangeable terms at one time, and Litsters or Littesters were fairly plentiful. The litterters took part as a body in the pageant of York trades in 1415. One Adam del Bank, Littester, erected an addition to a York church in the same century. A John Littester headed a Norwich rebellion in 1381. Some were known as litsters and others as dyers. A Geoffrey le Degliere and Robert le Dighestere have left their marks on the 15th century and Dyer & Dyster are both extant as family names. In the French form the dyer was known as Gilbert le Teinturer, Richard le Teynterer, Philip le Tentier and so on and names like Tentor seem to be derived from that source.

Cloth finishing operations account for a variety of surnames. The Tuckers were fullers of cloth and a tucking mill erected on the Welsh borders is one of the first monuments of Flemish clothmaking activities in England. Persons described as "le Tukere" or "Toukare" or as Tokkeris are traceable fulled woolens "under foot or in fullying stokkes" in the 14th century. Some of the Walkers are supposed to derive their name from the walking or trampling of cloth and some but not all the Taylors may have had four or five centuries back. The Fullers ancestors who were not tailors but "tayselers" or teazlers. The latter process is ancient enough, for until cloth had been "with taseles craccked" it was not reckoned "comely to wear" five hundred years ago. The Shermans, Sharmans, Shearers and the like had forbears who were forbidden to use a knife blade or pumice stone, but "sheers only" in cropping the face of cloth. The cleachers who were described as "le Blakester" or "Blackester" have descendants whose names are modifications of the word black.

Tradition says that the name Webb was conferred on a West of England manufacturer by an English king. The name is doubtless among the oldest in the industry, but its conferment by the king is doubtful. "My wife was a webbe and woolen cloth made" wrote the author of Piers Plowman and "le Webbe," "le Webbere" and "le Webestere" were names at very early dates. The Pinners are probably "peigneurs" or combers of wool who in early times were known as "le Peinnur" or "le Puigneur" when they were not called kembers, keamers or kempsters. Norman and Teutonic names for one trade coexisted in several instances and whether a man was a Laner or Lanier or a Wooller or Woolmonger was all one as far as his dealings went. That there are not a proportionate number of spinners in the world is explained by the knowledge that the work was done mostly by women. There are more Websters and Webbs than Weavers and more Weavers than Textors. Perhaps some Textors became Testers and Dexters. It is known that an Otto le Texter was bailiff of Norwich in 1250 and John Tixter was mayor of Gloucester in 1270. Some of the Taylors are possibly called after the members of the London Teliers or Weaver's Gild. "Time beyond memory of man" in 1409 they had formed a "corporated craft called Weverscraft" and as makers of woolen cloth they strongly resented

the intrusion of immigrant followers of "lynnenweaverscraft" who paid no dues.

The Chaloners seem to be the namesakes of those who made chalons, later called shalloons, and used originally as bedcoverings. There were professional wool packers in each staple town who may have founded the families called Packer. The Staplers in addition to wool and pelts handled hides, but wool is the commodity with which their trade has been associated distinctively. Wadmen who dealt in woad and maddermen or madderers who handled madder have left surnames behind them as have the flaxmen who sold flax. Designing was not a trade separate from weaving in these distant days and it is unlikely that the Tickners (Dutch, teekenaars) were textile designers unless they worked in the tapestry line.

Textile employments have left their impression upon family names, but in point of number their christenings do not seriously rival the myriads of Smiths. Venator.

MACHINERY FOR KNITTING HOSIERY

Editor Textile World Record:

What size circular knitting machine is necessary for knitting ladies' and men's half hose? Also what size ribber for the tops on half hose. Is there a machine on the market that will narrow tubular work by transferring stitches automatically? Hoboken (2470).

The correct size knitting machine to use for ladies' seamless hosiery would be 3 3/4 inches measuring from back to back of needles. The correct size for half hose would be 3 1/2 inches. Should it be desired, however, to make both ladies' and men's hosiery on the same machine, the 3 3/4 inch should be used as that would be correct for ladies' and the fabrics can be tightened and so reduced in width to the proper size for men's half hose. Two hundred and twenty needles, 42 gauge being popular now, I would use a rib frame 3 1/2 inches back to back and have 110 needles in the dial and 110 in the cylinder.

There is no machine on the market, which automatically transfers stitches to narrow the width. I would advise equipping the plant with machines that automatically tighten the stitches to narrow the necessary parts of the hosiery. The high speed at which these machines can be run results in a large production. Ligny.

WEIGHT OF WARPS

Editor Textile World Record:

Can you give us the weight of a 500-yard warp, made of 2/30s cotton yarn with 2352 ends, also the same length and number of ends made of 2/30s worsted yarn? Minot (2474).

The weight of 500 yards of 2352 end warp made of 2/30s cotton yarn, also the same length and number of ends made of 2/30s worsted yarn is calculated as follows:

2/30s cotton is equivalent to 7 7/8 runs (15 × .5 1/4).
2/30s worsted is equivalent to 5 1/4 runs (15 × .35).
Then:
2352 (yards) ÷ 7.875 (runs) = 2.987 ozs. 2/30s cotton per yard of warp.
2.987 (ozs.) × 500 (yards of warp) = 93.3 lbs. (1493 ozs.) 2/30s cotton yarn.
2352 (yards) ÷ 5.25 (runs) = 4.48 ozs. 2/30s worsted per yard of warp.
4.48 (ozs.) × 500 (yards of warp = 140 lbs. (2240 ozs.) 2/30s worsted yarn.

QUICK BLEACHING METHODS

Editor Textile World Record:

I would like some information on quick bleaching methods for cotton goods with boiling compounds of liquor for same. Willard (2444).

I consider the permanganate process the quickest bleaching process. First boil in caustic soda at 2 per cent. from 8 to 12 hours. Then wash and pass through permanganate of potash and through a bisulphite of soda bath made acid with muriatic acid. Then wash off and pass through a soap bath so that all the acid will be neutralized. The goods are then ready for bluing and finishing. Parma.

The quickest bleaching method that I know is the caustic method with high pressure kiers. With this process goods can be bleached in from fifteen to twenty-four hours, ready for the mangle. This is the quickest, but I would not say it is the safest. With this process a great deal depends on the kiers. There are several different kinds of kiers on the market that can be used with the caustic bleach.

This process should be handled with care and only by experienced men, otherwise

there may be a considerable amount of damage done, that would cause the person doing the work to condemn the process as useless.

The goods are first sewed together in kier lots. If the goods are for bright finishes they should be singed or dressed before entering the process of bleaching. When the lot is ready put them through a washer, thoroughly saturating the goods with water and from the washer give them an acid bath, the strength to be 1° Tw. for light goods, to 2° or 2 1/2° Tw. according to the quality of the goods, the heavier the goods the stronger the acid bath. Plait the goods down on a stage to allow the acid to do its work on the dirt and gum in the goods, leaving them on the stage for about 3 to 4 hours. Wash the goods off the stage into the kier with a 1 1/2 to 2 per cent. solution of caustic soda ash with the necessary amount of water to cover the goods, and boil from 8 to 10 or even 12 hours, according to the quality and weight of the goods. Draw off the kier when boiled and wash the goods free from caustic and enter into the chemic bath at a strength of 1/2 to 1 1/2° Tw. for the heavier goods.

If the goods have boiled the necessary length of time and are thoroughly bottomed, two to three hours is quite sufficient to leave them in the chemic bath. The bleacher will soon be able to tell how long to leave the goods in the bath. I have found that light weight goods, say about 6 yards to the pound, need not stay over one hour in the chemic bath. This has to be decided by the bleacher and if he is experienced he will know when to take them off.

The goods are next washed and given a sour bath with either sulphuric acid or hydrochloric acid at a strength of about 1° Tw. This bath will brighten the white as soon as the goods touch the acid. They do not need to lie in this acid very long before they are ready to be washed for the mangles.

The process for bleaching goods from the grey to the white is as follows: The goods are first sewed together with a double end run, putting them in the sour bath in 1 1/2 hours. Let them lie in this three hours, wash them in the kier for another 1 1/2 hours, boil 8 hours, wash in chemic 1 1/2 hours, age in chemic bath 2 hours, wash off the chemic for 1 1/2 hours, and sour for 1 hour; then wash the goods for the mangle for another 1 1/2 hours, making a total of 21 1/2 hours. This is for a fairly light cloth, but with a heavier cloth the runs should be a little shorter, say one hour, but a little longer in the boil and probably a little longer in the chemic bath, with an average of 20 to 24 hours altogether, with 30 hours for extra heavy goods. With the caustic bleach I am figuring on one boil, but with the lime bleach and ash process, two and sometimes three boils are required.

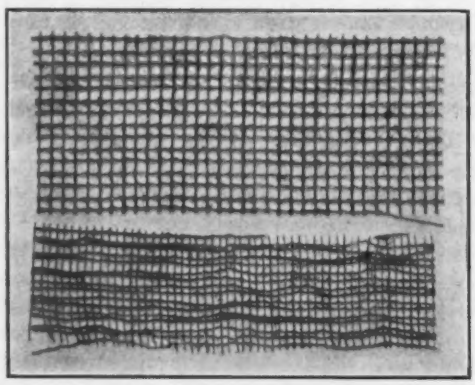
The above also applies to loose cotton, the only difference being in the process of washing, as loose stock is generally washed and bleached in the kier, caustic being the quickest method. Delco.

WEAVING LIGHT COTTON GOODS

Editor Textile World Record:

Enclosed find two samples of light material. The one marked (A) is a leno web; while the other (B) is plain. We want to find out what kind of looms are best adapted for their manufacture, and also where we could obtain them, either new or second hand. If you can give us any further information on the following points we would be obliged:

SAMPLE A, LENO WEB



SAMPLE B, PLAIN WEB

The speed at which the loom weaving either of the materials could be run.

Whether both could be manufactured economically on the same kind of loom, or if better results would be obtained from different looms. The material is 54 inches wide when finished and we expect that it would come down in width considerably in weaving. Manufacturer (2450).

I would advise an automatic loom with a leno reed for weaving light cotton goods

like samples enclosed. In that way "Manufacturer" will not have any doup harness, as the reed replaces the harness and doups. Both the plain and leno cloths can be made on this loom. The Crompton & Knowles Loom Works, Worcester, Mass., the Draper Co., Hopedale, Mass., and the Stafford Co., Readville, Mass., build looms for weaving these goods. Rolleston.

I have made goods similar to samples submitted on Mason, Calvin and Draper looms. I consider it very necessary to use a worm take-up motion on goods of this kind, as the filling will be laid in more evenly. I have obtained good work with the loom running at 150 picks per minute. I have used a marquisette motion for this work and prefer it to a dobby. If a plain weave is desired and the sley is the same as used in the marquisette, the threads can be drawn through only part of the reed for fancy borders. If there are not both leno and plain in the same piece I would advise taking the marquisette reed off, disconnecting the comb and other working parts used for the leno and operating as a plain loom for weaving plain goods. The comb and reed can be readily removed from the loom and the other working parts disconnected without removing them. Kennebunk.

I think it best to use two kinds of looms for weaving the light cotton goods like samples enclosed. Any light plain loom will weave the plain gauze, but there must not be too much drag on the warp as there are so very few ends in the warp. In order not to have the fabric drag on the breast beam, I would advise getting a glass rod about 6 inches longer than the fabric is wide, fastening this on the front edge of the breast beam so that the fabric will not touch either the top or front side of the breast beam, as this would have a tendency to pull the picks together. The take-up rolls should be covered with very fine sandpaper and not with a rough covering. The loom runs about 140 to 160 picks per minute. The following firms build looms suitable for weaving this kind of cloth. The Whitin Machine Works, Whitinsville, Mass.; Saco-Lowell Co., Lowell, Mass.; Crompton & Knowles Loom Works, Worcester, Mass.; the Draper Co., Hopedale, Mass., and the Stafford Co., Reedville, Mass.

For the leno weave I would advise getting a light loom with a six harness dobby, having the breast beam and take-up fitted with a glass rod and fine sandpaper. The plain loom could be made to weave this fabric, but the results would not be as good. I would not advise buying second-hand machines. They would need so much fixing that it would be cheaper in the end to buy new looms. The looms I have suggested are not very expensive. Overseer.

SAMPLE OF BLEACHED STOCK

Editor Textile World Record:

Enclosed is a sample of bleached stock. Please advise us whether this is flax or jute and where we can secure this stock in the United States.

Salem (2501).

Our fiber expert to whom we forwarded this sample replies as follows:

I fail to recognize this fiber. It is not flax, and if jute, its character has been changed by treatment. I sent it to an expert of the Barbour Company, but he could not place it. At any rate it is poor stuff and only fit for paper stock. I do not know where a supply can be obtained.

Charles Richards Dodge.

UNEVEN COLOR IN YARN

Editor Textile World Record:

Enclosed find a skein of 2/40s yarn which does not run even in color. Our dyer has the impression that it may be caused from some contact with machinery when spun. Can you suggest the cause? Gera (2492).

I have examined the skein of yarn and find that there are two distinct shades in it. I could not find any knots, but on unraveling the darker portion of the skein one thread seemed darker and yellower than the other. I do not think this was caused by contact with machinery in spinning, but think it is caused by using "tinges" or stained cotton in the mixing on the pickers. Roving or other bobbins are often allowed to get oily and the layers of roving nearest the wood get discolored from this cause and spin a yellower thread than the roving on the outside of the bobbin.

The skein examined has a distinctly dark part and also a lighter colored part.

Amazon.

Knitting Department

THE KNIT GOODS SITUATION

All of the lines of underwear are now ready for the spring season of 1916, and are well represented on the road. A good many of the travelers who left early are on their return home so that they will be here in time to see the early buyers when they arrive.

The manufacturers are somewhat disappointed at the way in which the Western jobbers have taken hold. Except in some few instances this disappointment is not surprising as it is well known that the jobber's stocks are very low and the farmers are getting a good price for all of their products. When the values the manufacturers are offering for next year are considered it becomes evident that it will not be long before business will be placed to the full satisfaction of all.

There is no doubt but that most of the buyers are waiting until they come to the market where they can make more general comparison than they can at home.

Everyone, not only in the West, but in the South, is looking forward to a good business this fall. The jobbers no doubt will place some additional business for their fall wants when they come to New York to operate for next summer.

It is quite a surprise to the trade to hear of the new enterprise that the Otis Underwear Co. are going into. A company that for years has been one of the leading manufacturers of knitted underwear is going to make nainsook underwear, shirts and drawers that will retail for 50 cents and union suits that will retail for $1.00 and up. This company is doing this, not because the managers believe for one moment that there is the same comfort in a garment made out of piece goods as there is in a knitted garment, but because continued advertising of nainsook underwear has made this class of merchandise a factor that has to be contended with.

Prices for 1916 are considerably lower than they were at the opening season of 1915, but are about the same as were made during this season after the war broke out and cotton was so materially reduced. In some instances they are even lower than were made at the middle of the present season.

There has been an increased demand for ladies' union suits, as well as for men's union suits. During the present season it has been impossible for manufacturers to keep up with the demand for immediate shipment.

One prominent manufacturer reduced his $1.00 union suits from $6.75 to $6.00. This is more of a reduction than competitive brands have made. One reason for this reduction is that the manufacturer is not going to use the Cooper crotch, but have one of their own.

It was hoped by the manufacturers that starting out this year at what everyone considered a fair price for next year, the buyers would place their orders outright and not as they have done in the past, subject to confirmation when they arrive in the market. It seems that they have gone back to this old practice that most of the manufacturers have objected to, and are placing orders subject to confirmation same as they have in the past. This is more prevalent in the 25 cent lines.

One prominent manufacturer of 25 cent balbriggans has reduced their opening price 5 cents a dozen on shirts and drawers and on their cheap union suits has made a reduction of 2 1/2 cents a dozen. Some of the manufacturers who sell their merchandise with obligatory anticipation will have a difficult time in the South trying to get advance orders, as the Southern merchant has not forgotten past troubles and will not obligate themselves for spot cash payments for wants in 1916 until the last minute.

One manufacturer has brought out a men's shirt and drawer for next year at $1.45

and instead of being the balbriggan color is a Jaeger mixture similar to what was made years ago. No doubt this will sell in the South.

The spring lines of hosiery are opening up on about the same basis as the present prices. In some instances there is a slight reduction and a few lines show advances, but the advances are mostly fiber and plaited hose caused by the advance in fiber silk as well as in the dyes.

It is rather remarkable that cotton hosiery has not advanced, as all the manufacturers are paying and have been paying exorbitant prices for their dye material. There seems to be a great chance for the return of fancy hosiery for next spring in the medium priced goods. At the present time the demand is confined to the higher price hosiery, but this is bound to be followed by grades that retail for 50 cents. Naturally there will be a demand in the 25 cent grades. How strong this development will be will have to be left to the future.

The best seller is the clock stocking. The demand is far in excess of the supply as the process is very slow and very expensive. At the present time it is confined to the better grades the same as it is with the finer hosiery.

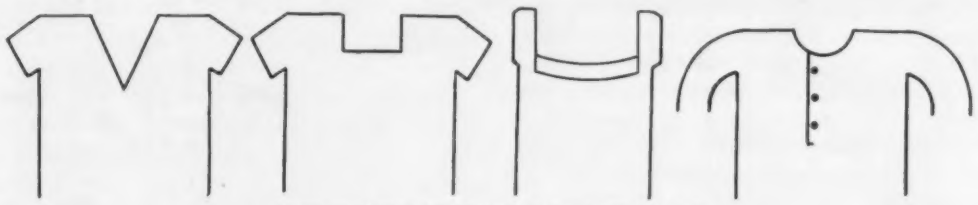
There does not seem to be any lessened demand for silk hose in all grades. All of the manufacturers making the best values continue to be sold ahead for several weeks.

The orders for the new light shades are naturally getting smaller as the season progresses, as the jobber is afraid he would have to carry them over to next season when no doubt the popular shades will all be different.

FINISHING KNIT UNDERWEAR

BY TRENTON

There are as many different styles of finishing a knit garment as there are knitting mills as there are many different ways of cutting or finishing the same quality of fabric. First, let us consider the various garments without considering the prices. These come under the head of infant's bands and shirts in three weights, light, medium and heavy; children's vests, pants and suits in three weights; misses' vests, pants and suits both in shaped goods and in two weights; ladies' vests, pants, suits and corset covers in shaped goods and in three weights; boys' shirts, drawers and suits in two weights, light and heavy; men's shirts, drawers and suits in three weights, light, heavy and extra heavy.



VARIOUS STYLES OF FINISHING KNIT UNDERWEAR

The machines generally used for finishing are seaming, cover seaming, crochet, shell, finishing or plain machines, button hole and button sewing. In addition to the above there are a number of fancy stitch machines such as the five-thread lace machine that sews on lace or edging with a series of wide flat stitches that give an attractive appearance to the garment. Then there is a drawers band machine that folds, turns the edges under and sews the band on to the drawers. This is quite an improvement over the old way of turning and folding with a separate machine and cutting by hand into the proper lengths.

There is a button-hole machine on the market now that makes button-holes very rapidly and in addition this machine also trims the threads and the button-hole is finished when it leaves the machine. Button sewing is also done much faster now than a

few years ago. Instead of the big, slow complicated affair of ten years ago, we now have a very simple little machine, of few parts that does its work at high speed.

The new flat seam has come to stay. It is something entirely new, as it trims and sews a perfectly flat seam. There are many high speed seamers. There is one on the market that trims and sews in one operation, but it sews the doubled or two-ply goods and is called "flat" because the stitches allow the seam to lay almost flat when slightly stretched. This same machine can be used for a crochet or to finish any rough edge. There are about five different styles of this machine, each made by a different concern.

A cutting machine is also required to cut button stays and facing from the bolt, also a turning machine that turns this on small rolls for easy handling by the sewing machine operators. These strips are generally folded on the edges while being rolled. Many concerns prefer a neck marking machine, while others have no use for it. Nearly every manufacturer uses electric cutters, which are a great improvement over the old style knife or scissors for cutting up the knit fabric. The electric cutters will cut through about a foot of thickness or say three dozen layers at a time of a light weight fabric.

I might also add to this list of finishing machines, a cloth folder which lays the cloth in folds about a yard long. This machine eliminates all wrinkles or twists in the goods as would be the case when handled by rolls. Some of the folders have a live steam pipe that blows steam through the fabric as fast as folded.

If any special machines are needed there are any number of builders ready to supply them. A manufacturer frequently gives a machine builder a few ideas of what he wants and the builders will spend almost any amount to develop the machine.

At a knit goods convention held a short time ago a prominent knit goods manufacturer said to a superintendent: "Don't have too many styles in a finishing room; the finishing game is bad enough; don't complicate it." I do not remember ever having heard a truer remark in these days of complicated finishes.

The history of finishing might be interesting, but we can see underwear finished today just as it was twenty years ago. A certain firm in the South makes a ladies' sleeveless vest. It is a 2 and 2, ribbed, about 1 3/4 pounds to the dozen in weight. This was generally cut V neck, but was sometimes made square and round neck. It is finished with a kind of cover seam stitch around the armholes and the neck is run around with a cheap grade of narrow edging. The bottom is crocheted with ordinary cotton yarn. The trade laughs at this garment, but buys it and this concern is always busy.

As a contrast to this Southern mill there is a small knitting mill in Pennsylvania that makes the same garment except that the finish is a little better and this mill has seen hard times quite often during the last three years. I cannot explain why this is so.

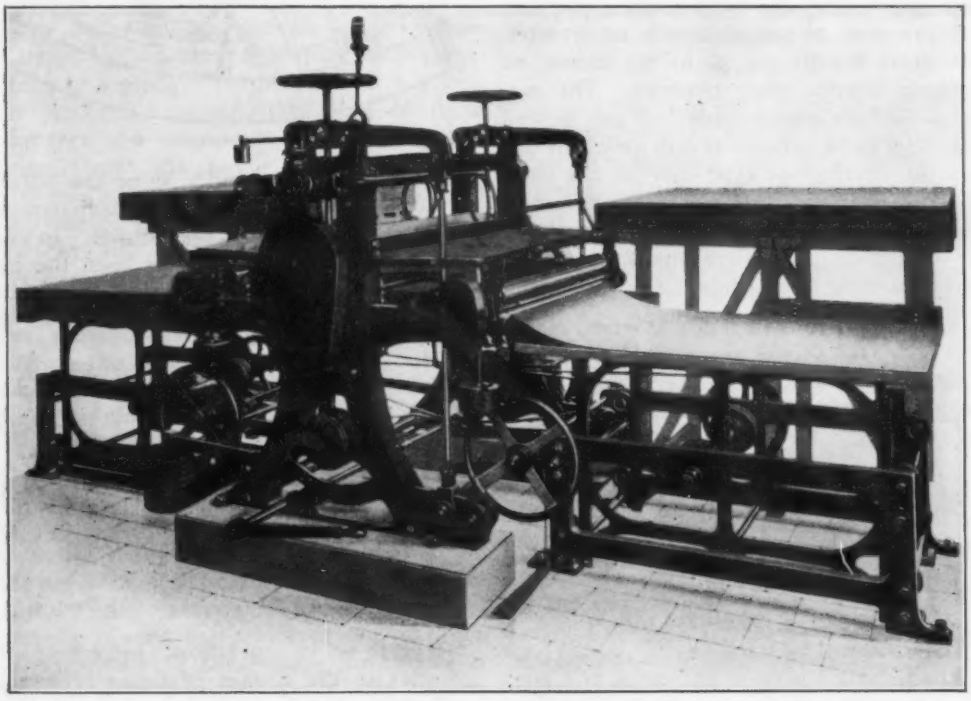
Another very popular article is a ladies' shaped garment that has not changed its method of finishing since shaped goods were first made. It has a simple edging around the neck, with tape tied in a bow, three buttons, shell front, crocheted around the bottom and round sleeves without gussets. By round sleeves is meant sleeves knit on a small frame with a cuff attached, not the kind that is cut and shaped at the cutting table.

It took a long time to educate the public to the union suit, but it is here to stay. There are many patented ideas on union suits that are of real value and every month sees more patents and more improvements added. A popular, medium priced suit is made of combed yarn in either white or Egyptian cotton. This is a four pound garment, straight knit, full length, long sleeves. It is made in several kinds of crochet, open crotch, closed and loose flap, with a round neck, fancy edging with silk top and a silk shell over a crochet front, pearl buttons, crocheted with mercerized silk cuffs and ankles. The illustrations show various styles of knit garments.

THE HAUBOLD IMPROVED PRESS FOR UNDERWEAR AND HOSIERY

The illustration shows the new hosiery and underwear press built by C. G. Haubold, Jr., Chemnitz, Germany, and for which L. H. A. Schwartz & Co., 40 Central St., Boston, Mass., are the sole American agents. This machine is automatic in operation, one boy being required to operate it, and does the work of an ordinary hydraulic press. It is equipped with a pair of rolls, one being covered with elastic material and the other hollow and heated by steam. On each side of the rolls there are a pair of hollow steam-heated press plates. The hosiery or knit fabric is placed between two press boards which are then laid between the press plates where the desired pressure is applied. The press boards carrying the hosiery are then run through the press rollers to the other side where the goods are subjected to a second pressing between the other set of press plates. This transfer from one side of the machine to the other is automatic, the clutch which starts the movement being set in motion by pressing a foot lever.

There is a table on each side of the machine for storing the press boards. When the stock of boards on one side is exhausted the machine is reversed and the goods are started from the other side, this process being continued until the boards have all been transferred during the process of pressing. In this way the machine is alternately operated from left to right and from right to left.



THE HAUBOLD HOSIERY AND UNDERWEAR PRESS

This Haubold press has been in operation in Germany for a year and given complete satisfaction. The builders give the following particulars regarding its use: One German firm had formerly been able to press on an ordinary hydraulic machine 100 dozen shirts in 20 layers or 150 dozen jackets or drawers per day. The operatives required for this work were as follows: One girl for the entire day and three men for two hours daily to load and unload the machine. The

cost of attendance was as follows: The girl, 20 marks ($4.80) per week, or 80 cents per day; the men, 6 hours, 40 pfennnig per hour, or .576 cents per day; a total of $1.376 per day.

The new Haubold press operated by the same firm turned out 160 to 170 dozen drawers or 100 dozen shirts or 150 dozen jackets per day, the machine being operated by one boy whose wages were 12 marks ($2.88) per week, or 48 cents per day.

The new press requires 30 per cent. less floor space than the old hydraulic machine and the cost of installation is no greater. The press boards are 39 by 59 inches, no marking boards being required. The machine operates continuously and any desired quantity can be pressed at one time. In this way the operator is kept busy all the time, whereas with the hydraulic press a certain stock of goods is required for feeding it and the operatives are intermittently occupied, having nothing to do while the goods remain in the press for hours at a time.

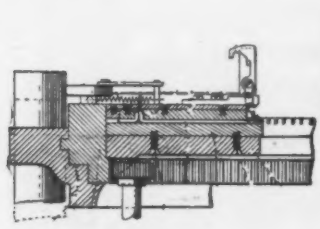


FIG. 2

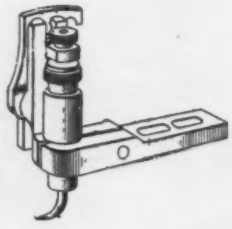


FIG. 3

The Haubold machine is suited for worsted, carded woolen, half wool and mercerized cotton goods and the pressure required for each class of goods is easily adjusted by removing or adding weight. No highly skilled labor is required for running the new press, which is very simple in construction. Further information can be obtained from the American agents.

The imports of shoddy waste into Canada during the month of January, 1915, amounted to 299,004 pounds, valued at $27,610, compared with 415,902 pounds valued at $29,330 during January, 1914.

A LATCH OPENING MECHANISM FOR KNITTIMG MACHINES

A device for opening the latches of knitting needles has recently been patented in this country and is described by the inventor as follows: This invention relates to dial

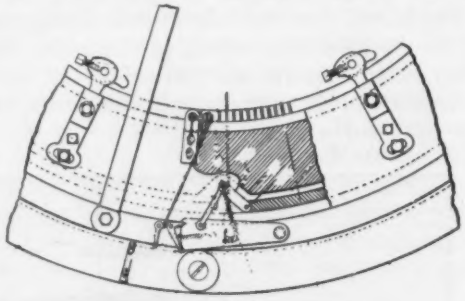


FIG. 1

knitting machines, and one of the objects is to provide an improved attachment for opening the latches of the needles. In such dial knitting machines it has been the custom to employ crude devices which continually plow through the needles, as the

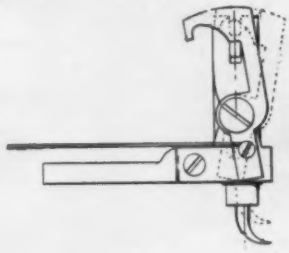


FIG. 4

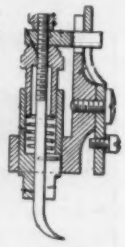


FIG. 5

machine is in operation, subjecting the needles to the danger of being broken or otherwise damaged. It is an object of this invention to provide a latch opening mechanism of such a construction that when it is used on a knitting machine the needles and latches will be preserved, reducing the danger of breaking to a minimum. Another object is to provide means for only opening the latches, at the time of completing the knitting of one sweater or other garment or the like and starting the next course of knitting. A further object is to provide means for restoring the latch opener to its normal position, subsequently to completing the first garment.

Fig. 1 is a plain view of a portion of a knitting machine with the invention applied. Fig. 2 is a sectional view on line 2—2 of Fig. 1. Fig. 3 is a detail perspective view of the latch opener detached. Fig. 4 is a side elevation of the latch opener, showing parts in dotted lines, and showing a section of the rod for automatically releasing the opener from operative position. Fig. 5 is a sectional view vertically through the latch opener on line 5—5 of Fig. 4. As far as the machine is concerned, it is only necessary to illustrate a sufficient number of parts to carry out the operation of the invention. Carried by the stationary part of the machine is a plunger in the form of a roller. In practice, however, a number of these plungers are employed for actuating the dogs, only one being illustrated. The plunger at certain periods is designed to be cammed upwardly through the stationary part or bed plate by any suitable means. Engageable with and movable in an annular recess of the bed plate or stationary part is the usual or movable arched ring which carries the dog. Also movable with the arched ring are the upper and lower dial plates, secured together by screws.

The dial plate is provided with the usual circular or annular slot having the cam edges in which slot the lugs of the needles engage, so that when the lower needle actuating dial plate is in the act of rotation, the needles will be actuated in the usual manner by the cams, thereby forcing them radially toward the center of the machine, in order to take and release the thread in the course of knitting. The needle plate is stationary, being secured by screws as shown clearly in Fig. 2, to a stationary dial plate, which is fixed to the bed plate. The free end of the cam link has pivoted to it a link which in turn is pivoted to the dog. A spring connects between the pivot and the arched ring. When the dog is rocked or moved in the direction of the arrow, the camming link is thrown in the position as shown in Fig. 1, and the dog is held locked in such position by the arm of the pawl engaging the notch of the dog.

When using the improved latch opening mechanism upon the knitting machine, it is also the purpose to provide a latch preserving device, Fig. 1, carried by the movable member or dial plate. This preserving device is so constructed and arranged as to glide easily over the needle.

As the needles are moving or projecting radially toward the center of the machine, the latch opening fingers or horn is moving transversely to each respective needle. In this manner the latches are opened.

SPEED OF KNITTING MACHINES ON NECKWEAR

BY RUTHVEN

In the spring of 1913, when the demand for knitted neckwear was at its height, I was sent to a knitting mill in a little town of Pennsylvania to investigate trouble they were having with their necktie machines. When I arrived at the place only one of the twelve machines was running, and this at the rate of about 200 revolutions per minute. The overseer explained that this was the only machine of the twelve that would run satisfactorily and that too many seconds resulted in operating the others. He also told me that they were all regulated to run at the same speed, regardless of what kind of work was being knit, whether plain, striped or tuck stitched. I saw at once one of the main causes of the trouble, too much speed.

I first put all the machines on plain work, and experienced no trouble, with the exception of regulating a few yarn changers, which were set too high and would feed the material over the top of the needles at times, instead of in the hook, and also straightening a few bent latches of the needles. When it came to striping, at this rate of speed on these machines, I found that I was up against it. The overseer told me that the manufacturer was very much opposed to reducing the speed of the machines, and did not believe he would allow me to do so, unless I could convince him that nothing else could be done.

I went into the office, and asked the manufacturer if he had a little time to give me.

I took him into the factory and started the eleven machines, that had been changed to plain, two feed work, and had them all running for about five minutes without a break. I then started the remaining machine, on which I had put the striping attachment, and the result was a break or slip-stitch every few inches. I explained to the manufacturer that, while I could have the machines changed so as to eliminate the trouble, the cost would not warrant making the changes, because he could buy new machines, for a little more than it would cost to repair them. I told him that I was sure that I could run all his machines on a paying basis by slightly reducing the speed, and proceeded to demonstrate the fact. The machines were arranged in two rows, facing each other, and were run from two different shafts and were all driven from 5 inch wooden pulleys. I had the overseer change one of the pulleys to a 4 inch, and soon had the machine running by actual count, 160 r. p. m. I then changed this particular machine to the various fancy stitches and stripes, and made the "pineapple" tuck stitch for him which he could not run at all, and showed him what he admitted to be the finest neckwear he had ever seen.

He seemed convinced about the advisability of reducing the speed, and wanted to know if it would be necessary to change the pulleys as occasion demanded. I told him that I thought it would be a good idea to run one row at not more than 160, and the other at 180 r. p. m. which arrangement could be changed at very short notice. I then made a general examination of all the machines, adjusting all the yarn changers, stitch cams, etc. There evidently had been a lot of experimenting on these machines, as I found most of the stitch cams ground down so far that it was impossible to make some of the fancy stitches. After going through all of them, I showed the overseer on which machines it would be advisable to knit different kinds of stitches, if he did not want to order new cams. The sinkers on some of the needle cylinders were pretty well clogged up with lint from the materials used, and I suggested that they be cleaned at least once a month, and the cams which controlled them oiled once a week. I then showed them a few little things about adjusting the take-up on the machines according to the materials used, and advised the use of coned materials in place of the spooled yarn, which caused a certain amount of friction by the ends of the threads rubbing against the head of the spools, at times causing breaks.

Several months after my visit I had occasion to be in the vicinity, and visited the plant. I was pleased to find that all of my suggestions had been carried out, that the plant was in A1 running order, was welcomed with open arms by the manufacturer who was satisfied that he had the best machinery and was making the finest grade of neckwear in the country.

IMPROVED CIRCULAR KNITTING MACHINE

The illustrations show a knitting machine recently patented in the United States and which is designed for knitting hosiery fabrics with longitudinal lines of tucked stitches extending for only a portion of the length of

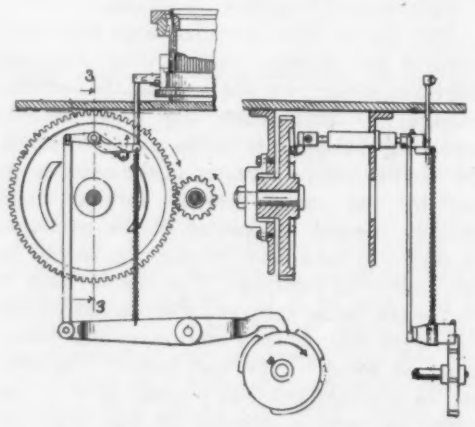


FIG. 1 FIG. 2

the stocking. The inventor John Lawson, of the Hemphill Mfg. Co., Pawtucket, R. I., describes the mechanism as follows: For the production of lines of tuck-stitches, tuck-needles, having longer latches than the regular needles, are employed, there being one tuck needle for each line of tuck-stitches.

For the accomplishment of the object of the invention these tuck-needles should in one portion of the stocking knit tuck-stitches, and in another portion of the stocking knit plain stitches.

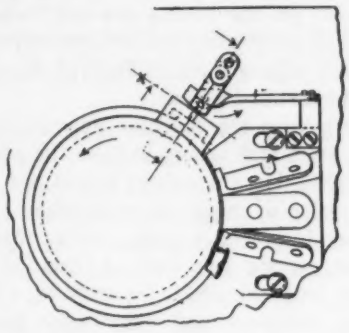


FIG. 3

The invention consists in a circular knitting machine having one or more tuck-needles, and means for automatically operating the latter at predetermined times as to whether the tuck-needle shall knit tuck-stitches or shall knit plain stitches. The invention further consists in an automatic circular knitting machine having in combination with the usual needles and devices for producing plain knitting, one or more tuck-needles, a movable tuck-cam for operating the tuck-needle, a main rotary device provided with cam surfaces for moving the tuck-cam alternately into and out of operative position, and a second rotary device for independently controlling the position of the tuck-cam.

A main cam-shaft having a drum fixed thereon is arranged to make only one revolution during the production of the stocking; the machine is further provided with a relatively large spurgear, so connected and timed with relation to other movable members of the machine that it makes one turn to four of the needle-cylinder. Both the cam-shaft and gear rotate in one direction.

Fig. 1 shows the improved parts to the knitting-cylinder and cam-shaft in the position for producing tuck-work, the tuck-cam (not shown) being in the depressed position; Fig. 2 is a vertical sectional view, taken substantially on line 3—3 of Fig. 1; Fig. 3 is

FIG. 4

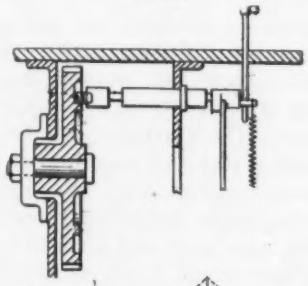
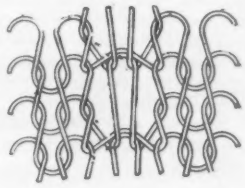


FIG 6



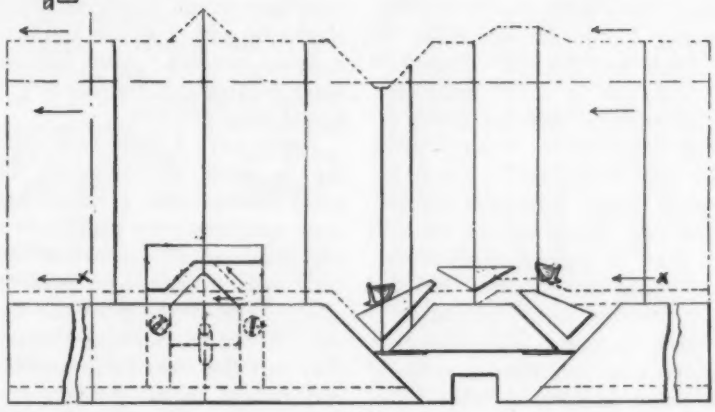


FIG. 5

a partial top plan view, showing the relation of the tuck-cam to the knitting-cylinder and stitch-cam; Fig. 4 shows the gear advanced 90° in its rotary movement, and having its cam-rib in temporary engagement with the roll of the tuck-cam lever, thereby elevating the tuck-cam; Fig. 5 is an elevation representing a development of the several stitch-cams, guards and tuck-cam, viewed from the inner side or face of the cylinder; Fig. 6 is a front view of the arrangement of the threads to form in the web a longitudinal line or wale of tuck presenting the appearance of split-foot work.

The construction and combination of parts enables the tuck-needles to knit tuck-stitches at one portion of the stocking or other tubular fabric, and at another portion of the stocking or fabric the same needles will knit plain or ordinary stitches.

MILL EXPERIENCES

Under this head we will publish from time to time stories from practical mill men, telling of vexatious and unusual difficulties which have occurred in different branches of mill work, and how they have overcome them. We invite mill men to send us an account of such experiences. We pay, of course, for all that we use. Facts told just as you would tell the story to a friend are what we want, not fancy writing.

KNITTING MILL EXPERIENCE

BY AVOCA

While traveling for a well known sewing machine company I decided to make a change and go back into the mill. Previous to this I was employed in a full fashioned knitting mill that made a superior grade of material. I had heard of a vacancy in a small, but long established mill outside of one of our Eastern cities. I secured the position on application. Being on the road I had, of course, been in a great many mills, but this one was about the poorest. Before going to work I met the owner of the mill and he reeled off a lot that I was expected to do. He also said he had some machines that the knitter could do nothing with. The building was an old one with no cellar foundation and with low ceilings that had never been painted or whitewashed. The ceiling had been covered with brown paper which had accumulated a lot of dust and this dust kept dropping on the garments. The knitter was an experienced man and knew his business. However, I went to work. The first machine I started on was a German straight bar looper that did not pick up all the stitches. They had tied about fifteen pounds of weights on the sliding pin bar to hold it forward and the girls had left on account of their back aching from sliding the heavy bar back and forward all day.

After taking the machine apart I looked around for a stiff spring to take the place of the weights, but the owner would not stand for the price of one. At noon when I went to dinner I spotted a dump across from the mill and on my way back I found a baby carriage with the old style springs which I at once removed and substituted for the weights on the looper. I was then given two Lamb sweater knitters to fix up and without a doubt they were in a bad condition. The needle grooves in the beds were almost large enough for two needles. They were using shellac, castor oil and lard to prevent the needles from falling down. The ribs in the beds had broken and new ones reset. They had warped the bed out of shape and the carriage would stick in going across. The carriages had been broken in several places and were brazed out of shape. These machines were mounted on a frail wooden table and when running the tables would sway back and forth like a boat. The machines would go about fifteen rounds and then stop with a smash and break about half a dozen needles. After half an hour's hard work picking out and raveling back, the girl would then proceed.

There were a number of complaints coming in about the sweaters looking like a wool blanket with a raised nap. The German machines were practically new, but they had removed all the canvas on the take-up rolls and covered them with emery as they claimed this would draw the work down better. To put the finishing touches to the wool they put the sweater in a pressing machine and turned on 60 pounds of steam. The forelady and most of the help had never worked in another mill and it was next to impossible to get them out of the old rut. After looking things over carefully I soon discovered that I could not continue in the position.

HOLES IN KNIT GOODS

Editor Textile World Record:

We are enclosing samples of knit goods which you will note have a number of small holes, the cause of which is a puzzle to us as we have traced the cloth from the knitting machines to the cutting table. The 2 and 2 rib was knit on a Scott & Williams body frame, cut 14 needles to the inch. The 1 and 1 rib was knit on a Cooper spring needle machine, cut 16 needles to the inch.

Knitter (2484).

I have carefully examined the samples of knitted cloth and find the size, nature and character of the holes are identical in both fabrics. It seems obvious that this is not a knitting defect, as it is not at all likely that the same trouble would be encountererd in knitting a 2 and 2 rib on a 14 cut Scott and Williams frame, and also on a 1 and 1 rib on a 16 cut Cooper frame. I have no doubt but that a painstaking and minute scrutiny of each and every machinery operation through which this cloth passed, from the knitting frame to the cutting table, will locate the difficulty. I would suggest a careful inspection of every machine and roller that this cloth comes in contact with in the various processes. First start with the take-up device on the knitting machine. Run the hand over every roller on the cloth turners, extractor feeds, washing machine, dryer and dryer take-up rolls, steamer and cloth folder to locate nails, splinters or rough surfaces. It looks to me as if the cloth was somewhere getting a squeeze that caused these defects. If the holes are punched clear through the cloth this is further evidence of a pinch somewhere in the machinery processes. Do not give up the search as there is a solution for all these manufacturing mysteries. Mutig.

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It is rather difficult for one to determine at a distance how these holes were made. They are not made in the process of knitting, as they are clean cut and sometimes take in three wales. On the 2 and 2 rib sample the holes follow the same course and are not cut all the way through. The 1 and 1 rib sample show the same cuts in the wale, but they are more pronounced and are cut all the way through. At a first glance a knitter would say "tight rollers in the take-up," but as the samples are knit on different style machines, a second guess would be "the rolls of the turning or folding machine." Perhaps the spreader of the roll-up machine fits too close between the bars that hold it in position while running. Scott & Williams made take-up rollers at one time that had wide and deep flutes and too much pressure would give the same results as shown in the sample. One flute would fit into the other like a pair of gears and leave a straight clean cut. These cuts would not show until the goods were finished, as the fabric would have to be stretched to pull the cuts apart. If the machine used is of a late type with close, fine cut flutes, I would suggest looking for the trouble in the turning or cloth folding rollers. I have given this question careful consideration and have only one answer to make, and that is, tight rollers. Trenton.

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Upon examining the samples of knit goods I find that there may be several causes for the holes. In the 1 and 1 rib the eyes of the needles may be too long or too low so that the yarn cuts in the sinking of the stitch. The beards are probably turned to one side or the other, rough or nickled blades may be in the cast-off, the frames may be old and the end of the needle ribs wormed too sharp, and while these may not cut the cloth on the frame, the bleaching process will separate the partly cut fibers. Bleaching, of course, is a very important factor and if the knitting is poor the fibers will separate. The cast-off may be too high and break the stitches or the push down may be too far in so that the stitch is tight on the needles and is cut during the pushing down.

The holes in the sample of the 2 and 2 rib were made in the knitting, but then again there are several causes for the trouble. The lathe may swing to one side and hook on the dial needle and break the stitches, the lathes may be loose or bent, or some of the slots may be worn, or the stitches too tight. The holes may be made in the bleaching or washing process, the goods getting caught in the rolls for a few seconds and then letting go with a jerk. Avoca.

Dyeing, Bleaching, Finishing, Etc.

THE AFTERTREATMENT OF COTTON GOODS

BY DR. LOUIS J. MATOS

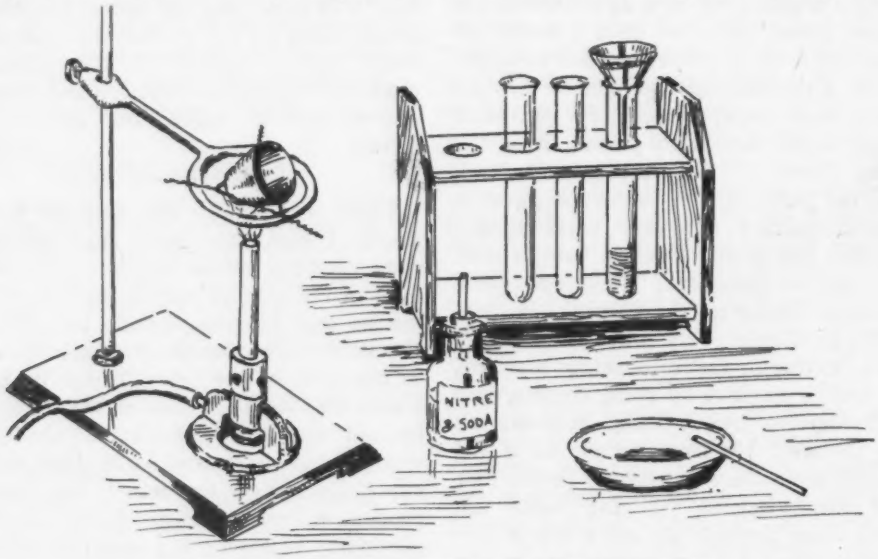
Certain direct dyeing colors on cotton are available for the aftertreating process, the purpose of which is to increase the fastness of the dyed color to both light and washing. Among the earliest attempts at aftertreatment was the use of a weak solution of formaldehyde, and which was beginning to be extensively practiced by dyers about 1898 on direct dyed blacks. The result of this treatment was to impart to the black a degree of fastness against strong soaping far in excess of that possessed by the straight dyeing.

While formaldehyde was of very little value for direct colors other than blacks on cotton, various chemical salts were experimented with, the result being that many direct colors were found which promptly responded to their use, and in consequence, were at once adopted by dyers.

The principal salts employed are as follows: Sulphate of copper, bichromate of potash or of soda, chrome alum, fluoride of chrome, acetate of alumina, sulphate of alumina, acetate of iron, and even the sulphates of nickel or of cobalt have been made use of in certain cases.

When sulphate of copper is made use of alone on ordinary direct, not developed, dyeings, the bath is prepared with 1 to 3 pounds of the salt, and 1 to 2 1/2 quarts of ordinary acetic acid, according to the depth of the shade. If the dyeing is done on a jig, the sulphate of copper should be first dissolved. Then add the acid, half at the beginning of each run, and always after the cloth has been rinsed after dyeing. If this is not attended to, loose color takes up its equivalent of the copper, and the results are not satisfactory. The aftertreating bath should be heated to about 200° F., but boiling does no harm. Rinse thoroughly afterwards.

If raw cotton is to be treated, the same procedure should be followed, only adding the copper and acid solution to the kettle in two or three portions. When the use of



APPARATUS FOR TESTING AFTER TREATED COLORS ON COTTON GOODS

both sulphate of copper and bichromate of potash or soda is necessary, the bath is made to contain the following quantities, for each 100 pounds of cotton, according to shade: 1 to 2 pounds of bichromate, 1 to 2 pounds of sulphate of copper, and 1 to 2 1/2 quarts of acetic acid. The dyed material should be well washed, and kept in the after-treating bath for 1/2 hour at 200° F.

The use of salts of copper always tends to increase the fastness of certain dyes to the influence of light, while the salts of chromium increase the resistance of many colors to washing, hence the reason for combining both salts under certain conditions.

When bichromate of potash, or soda, chrome alum, or chrome fluoride is used, the amount found most satisfactory in practice varies from 2 to 3 pounds of either one, according to choice and experience of the dyer, with 1 to 2 1/2 quarts of acetic acid, working the goods at the boil. The results are sometimes unsatisfactory, the finished goods not having the proper degree of fastness. This condition has been found to be due to an error in the treatment, in that the bath was not sufficiently acid at the end of the operation, and that the metallic salts were not completely taken up by the color on the cloth. It is the dye on the goods that is being "aftertreated," not the cotton of which the cloth is made. The bath at the end of the operation should be distinctly acid as shown by the use of a piece of blue litmus paper.

When increased fastness to washing and steaming is desired for goods dyed with direct or diamine colors, the use of either acetate or sulphate of alumina is recommended. For a jig holding 50 gallons, use 2 1/2 pints of a solution of the acetate standing at 5° Tw., or if sulphate of alumina, is used, 2 pounds will be sufficient. Some dyers, for convenience, use ordinary alum which answers as well, but 2 1/2 pounds is required. The pieces are run for 20 minutes, with half the salts added at the commencement of the first two ends. Salts of both nickel and cobalt act in a manner very similar to those of copper, without possessing any advantage over the latter, while salts of iron act like salts of alumina, but are less cleanly to handle.

Aftertreatment of the sulphur colors has become a matter of routine in many dye houses and it is surprising that the practice has not become general in view of the vast increase in fastness gained by the dyeing. Its value is particularly noticeable in the case of bichromate on blacks and blues. The shades of blue are distinctly improved, and light dyeings are prevented from changing their tone by reason of oxidation at a later period, the shade having been fully oxidized while wet. The usual formula for the bath is 3 pounds of bichrome, and 1 1/2 to 2 1/2 quarts of acetic acid per 100 pounds of goods. This bath is hot, and the goods are immersed for 20 minutes and finally washed.

Most sulphur color dyeings are materially increased in value by boiling for 20 minutes in a bath containing per each 100 pounds of cotton: 1 1/2 to 2 pounds of bichrome, 1 1/2 to 2 pounds of sulphate of copper, and 1 1/2 to 2 1/2 quarts of acetic acid.

A peculiar combination of bichromate of potash and sodium bisulphite is used for increasing the brightness of some of the sulphur blues, and the process has the advantage of being carried on cold. After the goods are dyed, add to the final rinse water from 1/2 to 1 pound of bichromate, and work the goods for 10 or 15 minutes, then run in the same bath 1 quart of a 64° Tw. solution of bisulphite of soda, allowing the goods to run for 10 minutes longer. Finally rinse well. Since the use of formic acid is becoming more common in dyehouses, it may be substituted for acetic acid with equal results. In fact, many dyers prefer formic acid, claiming that more effective chroming is obtained than with acetic acid. This claim is borne out in woolen goods practice.

Many classes of cotton goods on the market which have been dyed level shades with apparently fast colors are constantly encountered by dyers and converters, and it is interesting to know how they have been dyed and whether aftertreated or not. To ascertain whether a clipping of cotton cloth has been dyed with a direct or other dyestuff,

recourse is had to various tables that have been published from time to time, but since these are usually very complicated to one not accustomed to using them, it will be well to note the following reactions.

Nearly all direct colors on cotton are at once turned black or at least are very much darker by being touched with a drop of concentrated sulphuric acid. There are a few exceptions to this rule, but not many. Instead of touching the sample with the acid, it is often more convenient to immerse the clipping in a few drops of the acid contained in a china dish, as shown in the illustration.

All direct dyes on cotton are decolorized by boiling in a solution of sodium hydrosulphite, without the color reappearing on the sample after washing. Sulphur colors are almost completely decolorized and upon washing and exposing to the air for a short time, the original color returns.

To detect chromium, the presence of which might confirm the suspicion that the cloth was aftertreated, a very small clipping not exceeding half a square inch of the cloth is ignited in a porcelain crucible and reduced to a perfect ash, as shown in the illustration. After allowing the crucible to cool for a few moments, place upon the ash a few grains of chlorate of potash or of a mixture of nitre and sodium carbonate. Heat again until the mass fuses for a few minutes, and allow to become cold. If chromium is on the cloth, the fused mass will show a distinct yellow coloration.

If copper is to be looked for, dissolve the ash in a few drops of hydrochloric acid, dilute with a little water, then add a slight excess of ammonia, and filter into a test tube. If a distinct bluish coloration is observed, copper is present. If the coloration is not sufficiently strong to be beyond doubt add to the solution a few drops of acetic acid, and a drop of a solution of potassium ferrocyanide (yellow prussiate of potash) when, if copper is present, a reddish brown precipitate will show.

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Canada buys some $20,000,000 worth of knitted goods annually, 75 per cent. of which its own factories supply. The remaining 25 per cent. has been imported.

PROCESS FOR TREATING YARN AND TWINE

The apparatus shown in the illustration and which has recently been patented in this country, has for its object the treating of yarn, thread, twine and similar materials in order to increase the luster, strength and elasticity. The inventor describes the process as follows: Fibers of animal or mineral origin contain an oily or greasy substance or substances, and vegetable fibers contain a gummy substance or substances. Sometimes such vegetable fibers are treated with oily or greasy substances after liberation and before spinning.

It has been found that if a suitable degree of heat be created frictionally or otherwise in the yarn, the oily, greasy or gummy substance contained therein is softened and brought to the surface. When the yarn is subjected to a rubbing action, simultaneously with such creation of heat therein or immediately thereafter, a smooth, even and glossy finish is imparted to the yarn. The strength and elasticity of yarn treated in this manner are increased because the oily, greasy and gummy substance so brought to the surface by the creation of heat therein is spread over the surface fibers by the rubbing action and serves as a binder to increase the adhesion between the fibers, as well as a filler for the yarn.

With the new method it is best to create heat frictionally by rubbing the yarn over a hard polished surface, as by passing the yarn through a member rotating in the direction of the twist of the yarn, creating heat and subjecting the yarn to the rubbing action simultaneously. The resulting heat serves to soften the gummy, oily or greasy substance or substances contained in the yarn and to bring the same to the surface, so that it may be used to finish, gloss and size the yarn under the influence of the rubbing action, giving the yarn a natural gloss and finish.

In the drawings which accompany and form a part of this specification, two forms of the apparatus are shown.

Fig. 1 is a longitudinal section showing a finishing member through which the yarn

may be passed for the purpose of creating frictional heat; Fig. 2 is a vertical section of a modification. A hollow cone, d, which may be readily rotated on its axis carries the member, f, at its apex. The member, f, is shown in the present instance as a tube of ivory or other substance sufficiently hard to take a high polish. The yarn, a, is shown passing through the aperture, p, of the member, f, which is secured to the apex or neck, q, of the cone by a clamp-nut, r. The neck and body of the cone may be provided with slits, s, which form yielding jaws adapted to spread sufficiently to permit the insertion and removal of the member, f, and to be clamped against the latter by the nut, r. While the yarn is being drawn through the

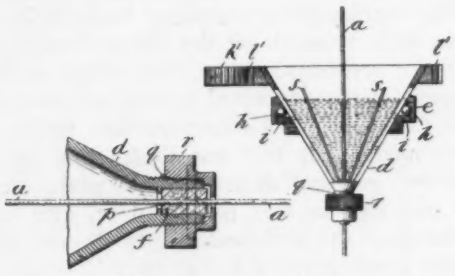


FIG. 1

FIG. 2

apertured finishing member, the latter, rotating rapidly with the cone, d, rubs the yarn and develops heat by friction. The heat so developed softens the natural gummy, oily or greasy substance of the yarn and draws it to the surface over which it is spread by the finishing member.

In case there is not a sufficient quantity of natural finishing substance in the material a sizing or finishing substance is applied to the yarn prior to treatment by the rubbing device. In such case the cone, d, may be made to serve as a container for the sizing substance, being then supported so that its axis is upright and its apex or neck points downwardly as shown in Fig. 2, which also shows the gear, k' l', by which the cone is rotated, as well as the ball bearing, e, comprising a runway having a series of balls, h, secured by a retainer, i. The yarn to be treated first passes through the size and becomes coated or saturated and then passes through the finishing device, f. The method is particularly useful in finishing and glossing flax and ramie yarns and the like, and careful tests have shown that the treatment increases the strength and elasticity of the yarn, besides imparting a glossy finish.

DYEING AND BLEACHING COCONUT FIBER

From a Paper by S. G. Bailey Before the Society of Dyers and Colorists

Owing to the varied uses of coir fiber, it is required to be dyed black as well as all colors of the rainbow. It is very extensively employed for making household brooms of a cheap quality, both dyed black and in its raw, undyed state. For dyeing black only basic colors are suitable, and even with these it will be found extremely hard to dye; 2 1/2 to 3 pounds of dye must be used for each 112 pounds of fiber, with no other addition to dye batch. A four hours' boiling is recommended. When dyed black, coir is also used for what is known as "curled fiber," or imitation hair.

Another industry, which perhaps has more call for coconut fiber than the brush trade, is the mat-making industry. For this branch of business it is required to be dyed bright shades, and as the natural fiber is of a decided brown color, it must first be bleached. Three methods of bleaching are available, and all give equally good results—(1) chloride of lime, (2) hypochlorite of soda, and (3) permanganate of potash and sulphureous acid.

With regard to dyestuffs, the acid, basic, and substantive colors may be used, but the acid colors are chiefly employed. When dyeing with acid colors the fiber should be dyed, boiling for one to three hours, in a very short bath, containing 8 ounces of Glauber's and 8 ounces of alum per 10 gallons of liquor, and dried without rinsing. The baths can be preserved for further use and need be charged only with half the amount of dyestuff used in the first bath. Basic and substantive colors are also used for dyeing coconut yarn, more especially the former, for deep, heavy shades.

A DIFFICULTY IN FULLING OVERCOME

BY ELMO

Several times I have encountered difficulties arising from acid in the stock and my experience may be of interest and benefit to wool goods finishers. I have never had any great difficulty in the use of shoddy that has been purchasd from a reliable manufacturer, but have known of quite a number of instances of trouble where the mill made its own shoddy. This is doubtless due to the fact that the manufacturer of shoddy realizes that it is all important that the stock be delivered in the best possible condition, if he expects to hold the trade; while shoddy made at the mill is seldom subjected to such careful treatment. I was once called to finish at a mill that was manufacturing a line of heavy goods for overcoatings largely of shoddy stock made at the mill. There was trouble in scouring, also in getting the goods to full up to the required width. The soap in the fulling mill appeared thin and watery, and it was quite impossible to get up a lather in the washers except by a second or third soaping, after a good rinsing with warm water.

It looked as though there was something in the stock that was injuring the soap and I so informed the superintendent. He assured me that there was not a mill in the country that was as careful about preparing and neutralizing the stock as he was. This served to assure me that he would not be likely to make any changes, but expected me to produce results from existing conditions. I increased the body of the fulling soap, and also added a liberal quantity of ammonia, which would tend to have a neutralizing effect. This resulted in a marked improvement, but the goods in the washer did not lather well. Knowing that I was "up against it" because of the inability to apply the remedy at the proper place, I continued to suggest that a change in preparing the stock and freeing it from acid would be best.

The superintendent made no effort in this direction, and it was only by a liberal use of soap that the goods were brought out fairly well. A better felt and fabric would, however, have resulted from a stock that was free from all trace of acid.

A special order for a fabric, to be delivered on short notice, requiring longer stock than the shoddy, resulted, as I afterwards learned, in the use of stock that had not been through the carbonizing process. When the first pieces were fulled, I noticed a marked change in their appearance. They came up quickly and the soap seemed to hold up better during the process. The superintendent became interested, and was on hand to see how they appeared in the washer. All the other goods required a good soaping and rising off before any semblance of a lather could be produced, but these special pieces lathered up with the first soaping, and with only four pails of soap. The regular goods required from eight to ten pails to work off the dirt and acid before a second soaping. The lather on the special pieces increased until it ran over on to the floor. The superintendent made no comments, but told me to let him know when I got another set ready to wash. This I did, and he sent for the dyer, who had charge of the carbonizing, and showed him how goods acted that had no acid in them. From that time on there was a change in the methods at the shoddy department, and it was not long before all difficulty in the fulling and scouring of all the goods was at an end. This could have been accomplished much sooner, had not the superintendent been so cocksure he was always right.

Not long ago I was called to a mill that was starting on a line of army goods very similar in weight to the overcoatings mentioned above. They were having some difficulty, and wished me to help them out. The goods were to be finished 32 ounces and 56 inches wide.

When the cloth got to about 61 inches the fulling ceased and chafing began, so that further fulling resulted in injuring the goods. I found the soap lacked sufficient body to full goods of that kind and I told the manager that the stock seemed to contain something that was an injury to the soap. He said the shoddy stock was stripped and it

might be that it was not properly neutralized afterward. He said he would take measures to correct any such condition. He sent at once for an expert dyer, who went to work to deliver the stock in good condition. I learned afterwards that not only had the neutralizing been faulty, but the treatment for stripping had been excessive, injuring the strength and fulling capacity of the stock. I built up the soap and got better results, but still the fulling stopped at about 59 inches, and the cloth ran in the mills almost double the length of time it should have required.

The manager asked "What can we do to get the cloth at the required width?" "It cannot be done here," I replied, "but you can take out some of your warp." He took 100 ends from the warps made of the yarn in process.

When the goods came around, made of stock properly stripped and neutralized, the 100 ends were put back, and 100 others added and there was no more trouble. There was no excessive chafing that had accompanied the work before, the felt was better and the work was done in about one-half the time previously required.

Aside from the importance of having the stock free from all traces of acid, there is a lesson to be learned from the prompt action of the manager in one case, as compared with the "sure-I'm-right" policy that resulted in a long delay and much damaged cloth in the other.

A MACHINE FOR FINISHING FABRICS

The illustrations show an apparatus recently patented in this country for handling piece goods in such processes as mercerizing, stripping, boiling off, bleaching, dyeing and finishing piece goods and weighting silks. The inventor, who claims a large production, uniform results and economy in labor, describes the apparatus as follows:

It has been customary in treating fabrics, especially in dyeing, bleaching and similar processes, to mount a large roll of cloth upon the beam of a jigger, reel the fabric upon another beam, passing the goods through a suitable liquor; and to jig the fabric back and forth by winding it from one beam upon the other, all the time passing the fabric through the liquor. Each step in the process required that the whole piece be jigged back and forth from one beam to the other. If it was desired to subject the fabric to liquors of two or more different colors, it was necessary to jig the fabric through each liquor several times; and very often it was necessary to jig it through water to

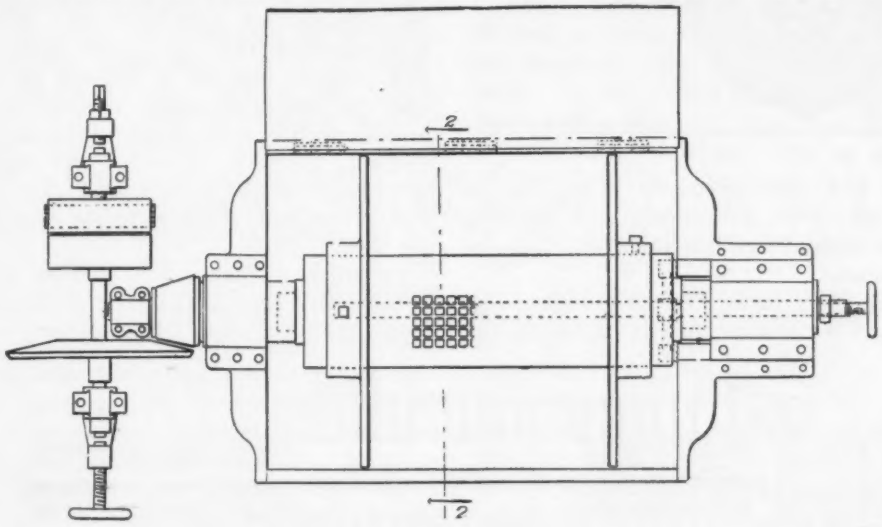


FIG. 1

wash it, between the different dyeing operations.

Every time the fabric is jigged from one beam to another considerable time, labor and power are required. It was also necessary to remove the fabric from the jig and to dry it upon a separate machine. In addition to the time and labor required for these operations the cloth was subjected to unequal stress, and different portions of the whole piece were sometimes unequally affected by the liquor.

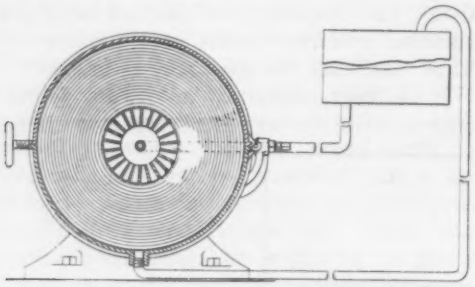


FIG. 2

The new machine makes it possible to treat the cloth successively with different liquors without handling the goods between treatments.

Fig. 1 is a plan view of the machine; Fig. 2 is a cross section thereof, taken on the line 2—2 of Fig. 1, and showing the cover closed; Fig. 3 is a longitudinal sectional view through the roller and associated parts.

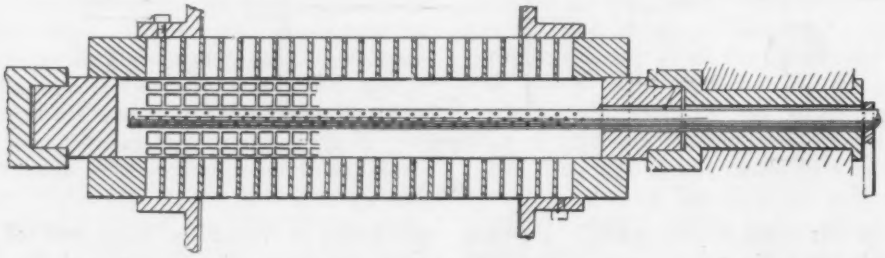


FIG. 3

The apparatus consists of a casing for inclosing the roll to prevent the scattering and loss of liquor. It comprises a stationary casing mounted upon suitable standards and a hinged cover. Outside the casing there is a shaft having fast and loose pulleys, to which power is applied. This shaft is adjustable, lengthwise, in its bearings by means of a screw operated by a wheel. Fixed to the shaft there is a friction disk, which is arranged to act upon a corresponding cone to revolve the shaft. The shaft projects through the standard and on one end it is provided with a chuck arranged inside the casing. In the standard there is a bearing block which carries a sleeve aligning with the shaft. On one end is a chuck arranged inside the casing. The journal block is adjustable in the journal by means of a screw operated by the wheel. With this arrangement the chuck is adjusted for shells of different lengths.

The shell consists of a tubular member having a bore closed at one end and open at the opposite end. One end of the shell has a trunnion for entry into the chuck member. The opposite end has a trunnion for entry into the chuck member. Throughout the greater portion of its length the shell is perforated. The wall is provided with regularly spaced openings of uniform area. The openings extend from the bore to the exterior of the shell.

In order to insure the passage of the liquor evenly through all parts of the roll of fabric and to prevent it from passing out at the end of the roll, end flanges are provided for closing the ends. These are carried upon hubs, which are adjustable along the shell and are secured in different positions by set screws. The hubs extend over portions of the shell so that when moved inwardly from their extreme outer positions, as shown in Fig. 3, they close the openings not lying within any particular roll of fabric which is

of less length than the maximum for which the machine is designed.

A STANDARD COLOR CARD

The Textile Color Card Association, 354 Fourth Ave., New York, Ramsay Peugnet, Secretary, has issued a color card on which are displayed one hundred and six shades on silk ribbon, which have been selected to serve as standards for the textile industry and allied trades. The shade of textiles depends to such an extent on the kind of material used, that the application of a standard list of colors is necessarily limited. It is impossible to give the same shade to any two different textile materials, wool, cotton, silk, linen, etc. The association which has been organized to produce this card states that "the purpose is to standardize colors for the textile and allied industries." This program involves the adoption of a separate card of standard colors for each textile material. It will be comparatively easy for an organization to adopt the colors, but the next and more difficult task will be to induce the manufacturers, not only to accept the prescribed shades, but to match them in their goods. The latter part of the undertaking will be complicated by a variety of circumstances, such as the dye house difficulties which have heretofore proved insurmountable, the supply of dyestuffs available and the impossibility of producing the same shade on different grades of the same material, wool, cotton or silk. The Textile Color Card Association will probably find that its purpose has been too broadly defined in the prospectus, and that in practice its color card will prove its value in a more limited field. The colors in the card have been numbered in such a way as to indicate the character of the shade. The scheme is explained as follows:

A system of standard numbers has been established giving each color a number consisting of four figures which express as nearly as can be done the character of the color according to the following scheme:

First, second, third figures indicate the relative proportion of the component parts of a color: 1, white; 2, red; 3, orange; 4, yellow; 5, green; 6, blue; 7, violet; 8, grey; 9, black; 10, no change.

Fourth figure indicates the strength of the color designated by the first three figures: 1, lightest; 2, second lightest; 3, light; 4, medium light; 5, medium; 6, medium dark; 7, dark; 8, second darkest; 9, darkest.

To illustrate: Turquoise is "S. 6153."

6	1	5	4
Blue Principal Color	White Principal Blend	Green Secondary Blend	Light Strength

The letter "S" (for standard) is prefixed to the number in order to avoid possible interference with established numbers.

A KIER WASH

Editor Textile World Record:

What is the best kind of wash to paint the inside of an iron boiling kier so as to keep it from rusting and spotting the goods? We have trouble along this line. I think there is a wash composed of oxalic acid, cement and lime. What proportion is this? Bleacher (2489).

I know of some firms using a compound of lime and oxalic acid mixed in the following proportions and which make a good kier wash: To one pound of slaked lime use 2 ounces of oxalic acid with one gallon of water. This is put on with an ordinary whitewash brush. The wash that I use and have used for a period of twenty-five years, is composed of nothing but the pure lime made into a good thick wash.

If "Bleacher" is having trouble with rust on his goods, I would suggest that he proceed in the following manner: Have a couple of men go into the kiers with an old file, sharpened chisel fashion on the end and scrape off all the rusty scales on the kier from top to bottom. Then brush it off with a wire brush and clean out under the grating so that there is not a particle of rust left in the kier. Fill the kier up with water and bring to a boil, mix up a lime wash of pure lime only and discharge the kier of water and give the sides a good coating of lime at once. When this is dry give the kier another coat on top before putting in any cloth. When this coat is dry run in the goods and boil. If the kiers are used constantly they should be given a coat of lime wash about twice a week. Let the kier dry before the wet goods are run in, as this gives the lime a chance to set and then it is not rubbed from the sides. If the bleacher will keep an eye on the kiers he will quickly discover any places that seem to collect thick

scales. Take these right off and give the kier an extra coat of lime wash. It does not take long to give this wash and if a coat is put on as soon as the kiers are empty it will dry immediately. Dulcimer.

Dye Recipes

The following recipes appear in the Dyers' Supplement, which is issued each month by the TEXTILE WORLD RECORD. The Supplement contains the colored samples, dyed according to recipes given. The selection of samples is carefully made, and it is the aim to show shades which are of especial interest to the dyer, and which the requirements of the market demand. The Dyers' Supplement is a 16-page pamphlet, in convenient form for preservation. Subscription price for the Dyers' Supplement $1.00 per year.

Recipe No. 218

ECRU ON LADIES' DRESS GOODS

Ecru on 100 lbs. ladies' dress goods. Prepare dye bath with

133 grains Amazo Brill. Blue G.
77 grains Amazo Brill. Red 2B.
238 grains Amazo Fast Yellow 6G.
(American Dyewood Company, 80 Maiden Lane, New York City, N. Y.)
15 lbs. Glauber's Salt.
1½ lbs. Sulphuric Acid.

Enter goods at 120° F., bring to boil in 20 minutes to 1/2 hour. Boil 3/4 hour. Rinse.

The colors used in producing the above shade are recommended for their good level dyeing properties and their satisfactory fastness to light.

Recipe No. 219

BLUE ON LADIES' DRESS GOODS

Blue on 100 lbs. ladies' dress goods. Prepare dye bath containing

4 ozs., 14 grains Amazo Blue.
1 lb., 5 ozs. Amazo Violet 12B.
280 grains Amazo Violet 4BO.
(American Dyewood Company, 80 Maiden Lane, New York City, N. Y.)
126 grains Amazo Fast Yellow.LR.
20 lbs. Glauber's Salt.
2½ lbs. Oil of Vitriol.

Enter goods at 120° F., bring to boil in 20 minutes to 1/2 hour. Boil 1 hour. Rinse.

The colors used to produce this blue are of good fastness to light and are very level dyeing colors.

Recipe No. 220

GREEN ON WORSTED YARN

Algama Black Green T on 100 lbs. worsted yarn. Prepare the dye bath with

3 lbs. Algama Black Green T.
(Badische Co., 86 Federal St., Boston, Mass.)
15 lbs. Glauber's Salt.
4 lbs. Sulphuric Acid.

Enter at 160° F. and dye at a boil for one hour.

Algama Black Green T will be found an excellent color for the production of self colors and compound shades.

Recipe No. 221

BROWN ON COTTON YARN

Naphtamine Direct Brown G R on 100 lbs. cotton yarn. Prepare the dye bath with

3 lbs. Naphtamine Direct Brown G R.
(Kalle Color & Chemical Co., 530 Canal St., New York, N. Y.)
2 lbs. Soda Ash.
30 lbs. Common Salt.

Dye at a boil for one hour.

Naphtamine Direct Brown G R possesses the characteristic properties of the direct cotton colors.

Recipe No. 222

YELLOW ON COTTON YARN

Sulfur Yellow 4G on 100 lbs. cotton yarn. Prepare the dye bath with

10 lbs. Sulfur Yellow 4G.
(Berlin Aniline Works, 213 Water St., New York, N. Y.)
20 lbs. Sodium Sulphide Crystals.
5 lbs. Soda Ash.
50 lbs. Glauber's Salt.

Boil up the bath with soda ash, then add the dyestuff which is previously dissolved with the sodium sulfide. Finally add the Glauber's Salt and dye at a temperature just below the boil for one hour. Rinse in water until it flows colorless and finally rinse in water containing a little acetic or formic acid, working in same for about 15 minutes.

Sulfur Yellow 4G possesses very good fastness to washing.

Recipe No. 223

RED ON COTTON YARN

Alizarine Indigo Red B Paste on 100 lbs. cotton yarn. First prepare color solution with

15 lbs. Alizarine Indigo Red B Paste.
(The Bayer Co., 117 Hudson St., New York, N. Y.)

which has been stirred up with a little water at 105° F., then add

12½ lbs. Caustic Soda, 52° Tw.
4 lbs. Hydrosulphite Conc.

Stir and allow to stand until color is dissolved, then dissolve

160 lbs. Glauber's Salt

in the dye bath and add the dyestuff solution, and dye for 3/4 to 1 hour at 175° F. Finally wring, air for 1/4 hour, and soap at a boil.

Alizarine Indigo Red B Paste possesses very good fastness to light, washing, alkalies, acids and cross dyeing.

Recipe No. 224

BLUE ON WORSTED YARN

Chrome Blue B on 100 lbs. worsted yarn. First mordant the wool in a bath made up with

3 lbs. Potassium Bichromate
2 lbs. Tartar.

Enter at 100° F., bringing slowly to a boil, and boiling for 1 1/2 hours. Wash and without drying dye in a bath made up with

6 lbs. Chrome Blue B.
(E. M. Thayer & Co., 411 Atlantic Ave., Boston, Mass.)
2 lbs. Acetic acid.

Enter goods at 120° F., bring to a boil during 1/2 hour and continue boiling for 1 hour.

Chrome Blue B is a very level dyeing product of good fastness to light and particularly adapted to piece dyeing.

Recipe No. 225

BLUE ON COTTON YARN

Kryogene Direct Blue G on 100 lbs. cotton yarn. Prepare the dye bath with

10 lbs. Kryogene Direct Blue G.
(Badische Co., 86 Federal St., Boston, Mass.)
20 lbs. Sodium Sulfide Crystals.
8 lbs. Soda Ash.
40 lbs. Common Salt.

Dissolve color with sodium sulphide and add to bath which has already been boiled up with soda ash. Then add salt, and enter yarn and dye at 200° F. for one hour.

Kryogene Direct Blue G possesses excellent fastness to washing and its fastness to light is very good.

Recipe No. 226

BROWN ON WORSTED YARN

Chrome Brown O on 100 lbs. worsted yarn. First mordant the wool in a bath made up with

3 lbs. Potassium Bichromate.
2 lbs. Tartar.

Enter at 100° F., bring slowly to a boil, and boil for 1 1/2 hours. Wash, and without drying dye in a bath made up with

8 lbs. Chrome Brown O.
(E. M. Thayer & Co., 411 Atlantic Ave., Boston, Mass.)
2 lbs. Acetic Acid.

Enter at 120° F., bring to a boil during 1/2 hour, and continue boiling for 1 hour longer.

Chrome Brown O dyes very level and is suitable as a self color or for combinations. It is well adapted for dyeing worsted piece goods.

Recipe No. 227

RED ON COTTON YARN

Columbia Bordeaux B on 100 lbs. cotton yarn. Prepare the dye bath with

3 lbs. Columbia Bordeaux B.
(Berlin Aniline Works, 213 Water St., New York, N. Y.)
20 lbs. Glauber's Salt Crystals.
1 lb. Soda Ash.

Enter at 180° F. and dye at a boil for one hour.

Columbia Bordeaux B possesses very good fastness to light, and good fastness to washing for a direct cotton color.

Recipe No. 228

YELLOW ON COTTON YARN

Milling Yellow O on 100 lbs. cotton yarn. Prepare the dye bath with

3 lbs. Milling Yellow O.
(Cassella Color Co., 182 Front St., New York, N. Y.)
5 lbs. Acetic Acid.
10 lbs. Glauber's Salt Crystals.

Enter at 120° F., raise to a boil in 40 minutes, boil 3/4 of an hour and gradually add an additional

5 lbs. Acetic Acid

to exhaust color, and continue boiling 15 to 20 minutes longer.

Milling Yellow O possesses excellent fastness to fulling.

Recipe No. 229

BLUE ON WORSTED YARN

Alizarine Cyanole E F on 100 lbs. worsted yarn. Prepare the dye bath with

2 lbs. Alizarine Cyanole E F Pat.
(Cassella Color Co., 182 Front St., New York, N. Y.)
4 lbs. Sulphuric Acid.
10 lbs. Glauber's Salt.

Enter at 140° F., and dye at a boil for one hour.

Alizarine Cyanole E F Pat. possesses excellent fastness to light, alkalies and steaming.

New Machinery and Processes

This department is designed to present from month to month a brief mention of new machinery, devices and processes being brought out in this country and abroad, that are of interest to the textile manufacturers. It is not a list of patents but of improvements on the market, the idea being to present to our readers a systematic monthly record of new machinery, etc., of interest to textile mill men.

Whenever possible we endeavor to make a personal investigation of the new machinery and processes described in this department. In the absence of such personal investigation we must necessarily rely upon information obtained from those who control the machines and processes.

We invite machine builders and others to send us such information for this department.

Mordant. The Westmoreland Chemical & Color Co., 925 Chestnut St., Philadelphia, Pa., are putting on the market what they call the "Lyons Mordant," which is adapted for silk, cotton or wool, particularly with black dye. It contains no aluminum, chlorides or nitrates. It is claimed that with its use goods dye blacker, weigh more and the fiber is not injured. In silk particularly it has been very successful and just now it is claimed that it is of special use as aniline dyes are not so easily obtained.

Press for Knit Goods. L. H. A. Schwartz & Co., 50 Central St., Boston, Mass., are introducing into this country an improved press for underwear and hosiery. It is built by C. G. Haubold, Jr., Chemnitz, Germany, and a description will be found in this issue.

Tin Roller Guard for Ring Spinning Frames. George Crabtree, Stalybridge, England. An improved card for the tin rollers of ring spinning and twisting frames which is designed to prevent accidents to the employes when cleaning the machines.

Machine for Moistening Yarn. Premier Machinery Construction Co., Manchester, England, have placed on the market an improved machine for increasing the moisture in yarn.

Roving Bobbin Stripper. H. W. Cowley & Co., Bolton, England. A machine for stripping roving from bobbins, dispensing with the use of the knife.

Tension Motion for Slashers. Walburn & Co., Hanging Ditch, Manchester, England. A device for regulating the yarn tension on the slasher sizing machines.

Scroll Band Guard. Jackson's Limited, Bolton, England. A guard for preventing the spinner from coming in contact with the scroll band of spinning mules.

Single-Reading Hygrometer. J. J. Hicks, Hatton Garden, London, England. An improved hygrometer for textile mills, the invention of A. de Normanville, Ealing, Middlesex, Eng. The difference between the wet and dry bulbs is read at a glance, it being unnecessary to subtract one reading from the other. This result is accomplished by using a sliding scale. The zero point on the scale is set at the reading on the dry bulb and the wet bulb then automatically indicates on the same scale the difference between the two.

Filling Stop Motion. George Hodgson, Ltd., Bradford, England. An improved fork for filling stop motions which is said to be very sensitive and reliable.

Dobby Lag. S. & W. Greaves, Bramley, Yorkshire, England. An improved lag for dobby looms. The raised portions of the lag are substituted for pins. The new lags are made to suit the weave required.

Thread Knotter. G. Sampo, Turin, Italy. An improved machine for tying knots in yarn.

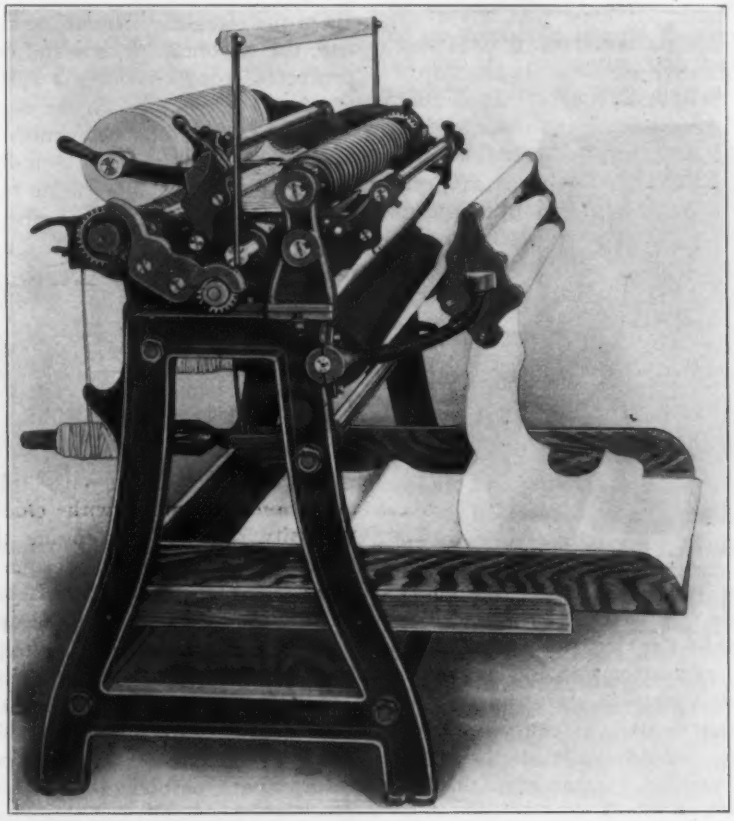
Mercerizing Machine. The Maschinenfabrik Emil Schneebeli & Co., Affoltern, Switzerland, have recently brought out a machine for mercerizing skein yarn which is built in two sizes, one for a production of 450 pounds per day of 10 hours and the other 1,100 pounds.

Combination Carding and Spinning Machine. Arthur Klein, Wittenberg, Halle, Germany. A woolen card to which a continuous spinning machine is attached. It is adapted for coarse yarn made of shoddy or waste.

IRELAND CLOTH CUTTING, FOLDING AND WINDING MACHINE

The illustration shows the machine recently placed on the market by the Ireland Machine & Foundry Co. of Norwich, N. Y. It is especially designed for cutting, folding and winding cotton or woolen fabrics, knit goods, etc., for bindings, facings, fronts, button stays, either straight or bias. It is in use by a number of knitting mills which are cutting and folding for themselves the bindings, stripes, etc., which they formerly had done outside. One manufacturer states that whereas he paid on an average $1.00 per thousand yards to have bindings cut, he finds his labor cost of cutting on this machine is less than five cents, as the operator can cut this quantity in ten minutes. Furthermore, he gains about 11 per cent. of the cloth over the old method of cutting and being able to cut exactly the quantity needed each day he avoids the necessity of carrying such a large surplus stock of trimmings.

With the new model of this machine an entire change from one size or style to another may be made in from three to five minutes. There are separate gangs of folders which may be changed instantly and no fastening is required. There are no separate disks between the rolls which results in saving of time in removing finished rolls and starting new ones. The disk cutters are self sharpening and all cutting, folding, ironing and winding is done on top and in full view of the operator. A new and simple spreading device stretches the cloth to the full width and takes out all wrinkles. The drive roller guides insure cutting the exact width from the start so there is no waste at either end and practically no waste on the selvage.



THE IRELAND CLOTH CUTTING, FOLDING AND WINDING MACHINE

The folds are pressed between heavy knurled and plain rolls producing accurate work. The power required is 3/4 h. p. and the floor space occupied is 5 feet 6 inches by 3 feet 6 inches.

IMPROVED INDUSTRIAL TYPE OIL SWITCH

This improved type of oil switch is used extensively in industrial establishments to control and protect induction motors up to 2500 volts and 300 amperes. It can be mounted on a wall, post or other vertical

INDUSTRIAL TYPE OIL SWITCH

flat surface, or by means of suitable supports on the machine operated by the motor. The switch is made by the General Electric Company in both non-automatic and automatic forms; the first simply to start and stop the motor, and the second to cut off current from the motor automatically on the occurrence of an overload greater than that for which the overload trip is set.

Through a recent improvement in the design of the mechanism, a low-voltage trip can be added to the automatic switch as an attachment at any time. To the non-automatic switch, either a low-voltage trip or a series-overload trip, or both, can be added whenever desired. Both means of tripping are mounted inside the switch cover.

Up to 550 volts (except on 110 volt, 60 cycle circuits, where the trip coil only is sufficient), an auto-transformer is used in place of the resistance previously required in series with the low voltage tripping coil. This transformer has taps to which proper connections can be made for the operating voltage. For 2,200 volt circuits, a new type voltage transformer replaces the transformer and series resistance used heretofore. The use of the new auto-transformer, or voltage transformer, makes the watt loss in the low-voltage device practically negligible.

On the switch with the time limit-overload trip, the calibrating tubes and dash pots are protected from injury by a cast iron guard which has been added to the equipment.

Switches can also be furnished with covers arranged to mount a round pattern ammeter and provide, in addition to control and protection, a means of knowing at all times the amount of current being taken by the motor. This gives a continual indication of the motor load and the opportunity to detect trouble in the motor or its circuit.

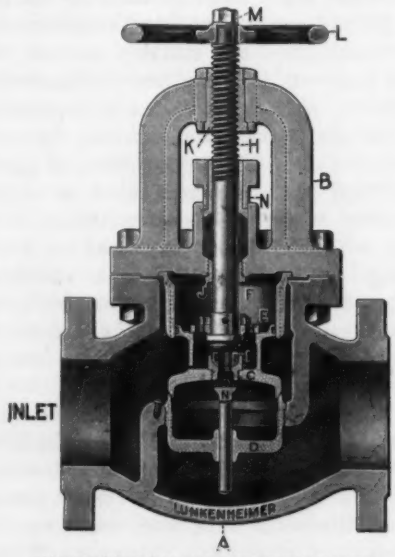
AN IMPROVED BALANCED THROTTLE VALVE

A valve of exceptionally free and easy operation combined with efficiency is of necessity required for engine throttle purposes. The above was designed with this important object in view. Its construction embraces all the essentials necessary for the highest type of engine throttle, it being a most reliable valve of exceptional durability.

An important factor in the design of this valve lies in the simplicity of the design. No small parts of uncertain reliability or strength are embodied in its construction. There are practically but three moving parts, —the main disc, by-pass disc, and stem,—and these being of large proportion, will safely withstand the hardest service to which valves of this type are subjected. With ease of operation, follows lack of friction, and as practically no force is required to open or close the valve, wear on all moving parts is reduced to a minimum. This ease of operation is directly attributed to the improved by-pass construction, which equalizes the pressure on both sides of the disc.

The operation of the valve is as follows:

Assume that the valve is closed and under pressure. As pressure will enter the balancing cylinder, by passing the piston ring and also entering through the small hole in the bottom of the disc cylinder, the pressure above the disc is equal to that in the inlet of the valve. This pressure aids materially in holding the disc, C, tightly to its seat, but unless some provision was made to relieve this



AN IMPROVED BALANCE THROTTLE VALVE

pressure, the valve would be extremely difficult to open.

The method of relief lies in the by-pass I, the opening through which is covered by the bottom of the stem H when the valve is closed. A slight turn of the handwheel, however uncovers this opening and the steam above the piston will then pass through the holes in the retaining ring E, thence through the hole in the by-pass disc I and holes in the main disc guide stem N, immediately relieving the pressure above the piston. Any pressure that may escape past the piston ring or through the small hole in the bottom of the disc cylinder, is also quickly relieved while the valve is being opened. There being practically no pressure above the disc, the operation of opening the valve is therefore an exceedingly easy one. The main object of the small hole in the bottom of the disc cylinder, is to drain water from condensation that may accumulate when the valve is connected in a vertical position, with the handwheel up. When in a horizontal position, any water in the disc and balancing cylinders will drain past the piston ring. Both the main and by-pass disc are operated simultaneously by one movement of a single handwheel, which not only facilitates the quick operation of the valve, but insures the opening of the by-pass valve at the proper time. Provision is made for regrinding both the main and by-pass disc seating surfaces, should they become worn. As all parts are renewable, the durability of the valve is increased.

Expansion or strains may slightly distort the seat, but owing to the annular extensions on both the seat and disc, which provide spring seating surfaces, they will regularly accommodate themselves to any slight irregularity, and therefore a tight valve is at all times assured. The body may be tapped anywhere above the seat or inlet end for drain connection, so that any water from condensation can be removed before the valve is opened. For the lubrication of the engine cylinder, the body can also be tapped on the inlet or outlet end, to which lubricator connection may be made.

This improved valve is made in sizes ranging from 4 to 10 inches inclusive. To suit various conditions of superheat and pressure and to meet the specifications of engineers who differ as to the materials used for the different parts, they are made in six combinations. The Lunkenheimer Company, of Cincinnati, O., manufacturers of this valve, have recently issued an attractive booklet illustrating and describing same, which they will send to anyone interested.

The total importations into the United States of all classes of silks during the five weeks ending March 27, 1915, were valued, in foreign prices, at $4,421,905, as compared with $4,303,768 in the same period last year.

The value of shipments of French silk goods to other countries in 1914 was $60,594,000; silk yarn, $3,355,000, and postal packages containing silk goods, $4,561,000, as compared with $74,454,000, $4,615,000, and $8,363,000, respectively, in 1913.

WOOLEN AND WORSTED FABRICS IN CHINA

A Report by Consul-General Thomas Sammons, Shanghai, China, made at the request of the Textile World Record

The valuation placed on woolen goods imported into China during 1913 was approximately $3,617,987 and for 1912 $2,779,435. At the same time China exported 37,368,266 pounds of wool in 1913, valued by the Chinese customs authorities at $4,069,013, as against 35,291,733 pounds in 1912 valued at $4,048,963. Of this over 90 per cent. went to the United States; Japan, Russia, Great Britain and Germany taking the balance. An examination of the declared export returns, as prepared by the American consular service in China, indicates that a valuation of $4,984,070 for 1912 and $5,534,413 for 1913 has been placed on shipments of Chinese wool, including various charges, as forwarded to the United States during those years. This difference in valuation is not unusual in comparing customs returns with the declared exports of various countries. China has not yet successfully developed the manufacture of woolen goods. Some time ago a woolen mill was built at Shanghai and another at Tientsin, but in both instances successful operation did not follow and the properties were closed down. With the duty on wool removed and giving required attention to packing and shipping details, the American manufacturer should, in due course, secure an important participation in the steadily increasing woolen and worsted fabric trade of China and of the Shanghai district. At present, however, with Great Britain and Germany leading, the European countries largely monopolize this business throughout China.

Manufacturers of woolen and worsted goods in the United States have practically no participation at this time in this trade at Shanghai, or throughout China, generally. There should be active and energetic representation on the spot, if possible. If not, then select some established and reliable American importing house in Shanghai or other cities of China, to represent the American manufacturer. Adopt a "chop" or trademark and prepare to give permanent attention to whatever business is developed.

Without giving careful attention to trade conditions and requirements, however, it will be difficult for Americans to compete successfully with the manufacturers of Leeds, Huddersfield and Bradford, and of Germany, Austria-Hungary and Belgium. A careful study must be made of the details of China's needs, and local conditions must be investigated and suitably served, year in and year out, in order to develop trade.

Owing to a general trade depression in China, the woolen and worsted fabric business is slack. The importation of goods of this kind has continued about as usual regardless of the depressed condition of business, with the result that stocks are accumulating. It is hoped that this condition is temporary, however, and that with confidence restored throughout the country there will be the usual increase in this line as in others suitable for this market.

The changes that took place in the Chinese style of dress influenced the demand for woolen and worsted fabrics following the rebellion of 1911. As a result unusually heavy shipments were made and some of the goods then brought to Shanghai still remain unsold. In many instances, the Chinese who adopted foreign dress in 1911 are gradually returning to the Oriental style of clothing the body. They derive more comfort from the old style of dress, but a fair per cent. will cling to foreign ways and thus, in the long run, bring more and more of the native population into the habit of using the products of other countries. In some parts of China, particularly in Northern China, the natives find foreign dress too warm in summer and not warm enough in winter. Accordingly, in some instances, they adopt foreign dress during the spring and autumn months only.

Large quantities of woolens and woolen and cotton mixtures are used in China for uniforms for the Chinese army and the police. The price of the ordinary khaki, army uniform cloth, is from 48 to 60 cents per yard, the black cloth being somewhat

cheaper. The price of cloth for officers' uniforms is about 96 cents per yard.

The principal articles of woolen manufactures imported into Shanghai are blankets, rugs, broadcloth, camlets, Spanish stripes, long ells, lastings, medium cloth, and in worsteds, yarns, cords and clothing material. There is also a considerable trade in cotton and woolen mixtures. A large part of the imports are distributed from Shanghai to the river and northern ports. Shippers usually pay cash to the mills on delivery and reimburse themselves by drawing drafts at four months' sight on Shanghai consignees, through the Eastern banks. German and English firms represented in Shanghai do the bulk of the business on an indent basis, that is, goods are ordered by Chinese merchants, who pay a commission of 2 1/2 per cent. to the foreign merchants. Packing is invariably in wooden cases, tin lined, except for long ells which usually come in bales, 20, 30 and 40 pieces per bale or case, wrapped in cotton tillots.

During 1913 there was a steady increase in the importation into China of worsted yarn and cord, Germany and Austria-Hungary having the bulk of the trade. Importations of worsted yarn by countries for all China for 1912 and 1913 are shown in Table 1:

Table 1

Country	1912	1913
Hongkong	$83,062	$135,689
Great Britain	96,847	149,506
Germany	296,752	437,856
Belgium	113,363	191,111
Austria-Hungary	56,000	221,977
Japan and Formosa	74,716	21,022
United States	64	...
Others	7,397	29,819
	$728,201	$1,186,980

The importation of the above for Shanghai amounted to about one-third of the total in quantity and value.

Under the heading of unclassified woolen goods Great Britain exported to China during 1913 over one-third of the total of 1,193,188 yards. Japan came next with a total of 249,923 yards, Russia having third place and the United States being practically unrepresented. The totals for all China for 1912 and 1913 are summarized in Table 2.

Table 2

Country	1912	1913
Hongkong	$116,609	$93,073
Macao	32,752	14,954
Great Britain	276,985	314,518
Germany	42,397	51,890
Belgium	13,911	29,108
Russia	143,061	137,281
Japan and Formosa	136,024	170,770
Others	10,053	18,589
	$771,792	$830,183

Russia also makes an exceptionally good showing in shipping woolen blankets and rugs into China, dividing honors for first place with Hongkong. France and Great Britain come next, but of course a large share of the Hongkong imports are nominally credited to England. Germany has fifth place in supplying China's blanket and rug market, and the returns credit the American mills with sending 1,990 pounds of rugs and blankets to China during the previous year. A brief statistical table is given in Table 3.

Table 3

Country	1912	1913
Hongkong	$135,940	$126,438
Great Britain	32,398	63,202
Germany	14,874	41,135
France	47,463	69,812
Russia	98,306	126,879
Japan and Formosa	32,947	17,975
United States	769	...
Others	6,146	25,316
	$368,843	$470,757

Germany supplies over half of the total of China's purchases of broadcloth, habit and Russian woolen cloth. Moreover, Germany is increasing its business while most of the other European countries, as well as Hongkong, show a falling off. It is interesting to note that the port of Shanghai handles about 75 per cent. of the imports of all China in goods of this kind. Germany alone entered at Shanghai in 1913 243,807 pounds out of a total of 275,096, including all countries, or on a valuation basis, $269,244 worth as compared with $293,921 representing the world's exports to Shanghai for that year.

The importation of broadcloth, habit and

Russian woolens by China for 1912 and 1913 is given in Table 4:

Table 4

Country	1912	1913
Hongkong	$63,025	$49,719
French Indo-China	10,765	12,758
British India	11,561	17
Germany	215,917	287,649
Austria-Hungary	7,531	14,669
Russia	13,207	5,093
Japan and Formosa	14,307	9,067
Great Britain	...	21,609
Others	7,792	11,888
	$344,105	$412,469

In woolen lastings, however, England turns the tables on Germany, as compared with China's importation of broadcloth, habit and Russian woolens. Of a total of 33,179 pieces, valued at $301,863, imported during 1913, Great Britain contributed 27,016 pieces valued at $246,171. Including Hongkong as largely representing British products in this line, Great Britain has a practical monopoly of China's markets in woolen lastings. Of the total of 33,179 pieces of woolen lastings imported into China in 1913, a total of 26,338 pieces were entered at Shanghai, and of that number all but 22 pieces are credited to Great Britain. Germany entered 499 pieces of woolen lastings in 1912 and only two in 1913, the total importations for all China being stated in Table 5:

Table 5

Country	1912	1913
Hongkong	$19,121	$55,018
Great Britain	181,298	246,171
Germany	4,167	19
Others	452	655
	$205,038	$301,863

In the classification of woolen importations into China long ells represent 48,813 pieces valued at $216,818 for 1913. Great Britain's share of the total is about 50 per cent., with the bulk of the balance coming from Hongkong. In this connection it may be observed that of the total credited to Great Britain for all China the entire amount being 22,110 pieces valued at $98,331 for last year, was entered at the port of Shanghai. At the same time Hongkong does not figure in Shanghai imports although that port shipped 17,076 pieces. valued at $78,964, into China. This illustrates to what extent Shanghai and Hongkong can be utilized in certain lines as distributing centers for the balance of China.

In direct shipment the freight rates to Shanghai and Hongkong are very much alike, Hongkong serving a large part of Southern China and Shanghai supplying the Yangtsze River ports and Northern China to a considerable extent. The total importations of long ells for all China for 1912 and 1913 are worked out in Table 6:

Table 6

Country	1912	1913
Hongkong	$68,506	$78,964
French Indo-China	9,419	36,758
Great Britain	83,367	98,331
Macao	...	660
Others	3,566	2,105
	$164,858	$216,818

Aside from a few pieces from Macao, Hong Kong and Great Britain handle practically all of China's imports of English camlets. For all China the figures are given in Table 7:

Table 7

Country	1912	1913
Hongkong	$84,412	$98,689
Macao	4,783	4,199
Singapore	59	20
Great Britain	79,832	67,738
Japan	77	...
	$168,163	$170,646

In summarizing the trade for all China, as given in Table 8, it will be seen that the entire importation of Spanish stripes from Great Britain constitutes the Shanghai entries, while Hongkong supplies practically the entire balance, thus dividing the business between the two ports:

Table 8

Country	1912	1913
Hongkong	$29,567	$57,830
British India	11,774	...
Great Britain	42,652	49,386
Others	2,086	3,957
	$86,079	$111,173

Woolen serges and suitings are not classified in the data herein given for all China, but for the port of Shanghai the importa-

tions of the former for 1913 are shown in Table 9:

Table 9

	Yards	Value
Great Britain	61,692	$49,847
France	434	502
Germany	1,746	1,275
Belgium	387	317
Austria-Hungary	129	130
Italy	237	174
Hongkong	172	97
Japan	156	202
	64,953	$52,544

In woolen suitings Belgium appears to dispute an otherwise practically free field with Great Britain, as shown by Shanghai's imports for 1912, given in Table 10:

Table 10

	Yards	Value
Great Britain	102,651	$84,476
Belgium	16,480	19,194
France	2,246	2,029
Austria-Hungary	146	152
Germany	1,961	2,470
Hongkong	102	53
	123,586	$108,374

In flannels a total of 105 yards is reported on behalf of the United States for 1913. Table 11 for all China, showing that France leads in the exportation of this article, with Hongkong, Japan and Germany selling approximately equal amounts:

Table 11

Country	1912	1913
Hongkong	$2,599	$6,037
Great Britain	3,776	4,607
Germany	2,461	3,790
Belgium	1,599	1,948
France	7,130	5,649
Japan, including Formosa and Korea	4,831	3,568
Russia	...	32
United States	...	205
	$22,396	$25,836

The trade in woolen buntings is small and shows a slight decrease for all China, as will be seen in Table 12:

Table 12

Country	1912	1913
Hongkong	$1,371	$1,067
Great Britain	8,129	5,151
Germany	343	33
Japan and Formosa	544	1,351
Russia	...	561
	$10,387	$8,163

Among miscellaneous woolen importations at Shanghai during 1913, being mostly from Great Britain, the following may be mentioned:

Table 13

	Yards	Value
Woolen Coatings	69,934	$69,923
Flannel Crepe	559	1,080
Woolen Tweeds	14,535	11,317
Woolen Trousering	1,873	1,797
Woolen Vestings	3,249	3,560
Woolen Beaver Cloth	10,963	10,496
Woolen Cap Cloth	3,380	1,856
Woolen Melton Cloth	7,592	3,878
Woolen Khaki Cloth (Japanese	711	708
Woolen Cashmeres	2,759	1,110
Woolen Army Cloth	8,837	3,054

A list of the leading importers of woolen goods is enclosed with this report and twelve samples of woolen and worsted fabrics as sold in the Shanghai market, each marked as to price and other particulars, are being forwarded under separate cover.

List of principal woolen goods importers at Shanghai:

Name of Company	Nationality
China and Japan Trading Co., Ltd.	American
Fearon, Daniel and Company	"
Frazar and Company	"
Markt and Co., Ltd.	"
Arnhold, Karberg and Co.	German
Melchers and Company	"
Siemssen and Company	"
Bradley and Company	British
Dodwell and Co., Ltd.	"
Garnett and Co., Ltd.	"
Harvie, Cook and Company	"
Ilbert and Co., Ltd.	"
Jardine, Matheson & Co., Ltd.	"
Lutzen, Brook and Company	"
Middleton and Co. (Shanghai), Ltd.	"
Reiss and Company	"
Shewan, Tomes and Company	"
Westphal, King and Ramsay, Ltd.	"
Large and Co., Fredk.	"

The above named firms may be addressed at Shanghai, without giving any street name or number. All may be addressed in English.

The value of the exports of woolen goods from France in 1914 was $29,554,000 and of woolen yarn $9,828,000, as compared with $42,508,000 and $19,648,000, respectively during the previous year. The value of the exports of woolen goods to the United States during last year was $3,418,000, against 2,379,000 for 1913.

Personals

Walter S. Mitchell has resigned his position as agent of the Chicopee Manufacturing Company, Chicopee Falls, Mass.

R. J. Bowes, for the past fifteen years manager of the Lawrence Felting Company, Millville, Mass., has tendered his resignation, to take effect July 1. He has been connected with this company for the past twenty-seven years, having started in with his father, the late W. J. Bowes, who was founder of the plant.

Arthur E. Willman, who was assistant superintendent of the weaving department at the Bigelow Hartford Carpet Company, Clinton, Mass., has again accepted a position with that company and has taken up his new duties.

Cyrus Rooney, who has been employed at the Berkshire Cotton Mill, Adams, Mass., in charge of the installation of drawing-in machinery, has accepted a position with the American Manufacturing Company.

Fred R. Elston has accepted a position with the Continental Worsted Company, Providence, R. I. He was formerly employed as superintendent of the Sonnhill Worsted Mill, Danielson, Conn.

Arthur H. Little has accepted a position as overseer of finishing at the Puritan Mill, Plymouth, Mass.

George A. Roger, overseer of finishing at the Bellevue Mill, Clinton, Mass., has resigned his position with that company.

Albert Ainley, who has been acting as overseer of weaving at the Golden State Woolen Mill, Long Beach, Cal., has resigned his position with that company.

Sylvester Lareau, designer and assistant superintendent at the Rochdale Mill, American Woolen Company, Rochdale, Mass., has resigned his position with that company.

John A. Thomas has accepted a position as overseer of weaving at the Clinton Textile Manufacturing Company, Clinton, Mass.

William H. Walsh has accepted a position as overseer of weaving at the Waterman Worsted Company, Putnam, Conn., to succeed Thomas Smith.

W. E. Johnson has been appointed agent of the Tallassee Falls Manufacturing Company, Tallassee, Ala. He was formerly manager of the Manchester Cotton Mills, Manchester, Ga.

Edward Farrell has been appointed superintendent of the Hillsboro Cotton Mills, Hillsboro, Texas.

G. S. Watkins has accepted a position as overseer of spooling and warping at the Clinchfield Mill, Marion, N. C.

I. W. White has accepted a position as overseer of weaving in Mill No. 1 of the Merrimack Manufacturing Company, Huntsville, Ala. He was formerly employed at the Brookside Mills, Knoxville, Tenn.

E. T. Barnes has accepted a position as overseer of spinning at the Grendel Mill No. 1, Greenwood, S. C. He was formerly employed at the Wylie Mill, Chester, S. C.

J. F. Miller has accepted a position as overseer of spinning at the Clinchfield Mill, Marion, N. C. He was formerly employed at the Saxon Mill, Spartanburg, S. C.

W. D. Burnett has accepted a position as overseer of weaving at the Panola Mill, Greenwood, S. C. He was formerly employed at the Victor Mill No. 1, Greer, S. C.

Isaac T. Prosser, superintendent of the Harmony Mill, Cohoes, N. Y., has resigned to accept a position as agent of the Chicopee Manufacturing Company, Chicopee Falls, Mass.

Albert Edwards, designer at the Minterburn Mill, Rockville, Conn., has resigned his position with that company.

William Drayton, designer at the New England Mill, Rockville, Conn., has resigned, to accept a similar position at the Minterburn Mill, same city.

Frank Little, assistant designer at the Hockanum Mill, Rockville, Conn., has been appointed designer at the New England Mill, same city.

Thomas F. McDonald has accepted a position as assistant superintendent and designer for the Smith Textile Company, Inc., Pittsfield, Me.

George A. Weldon has accepted a position as overseer of weaving and designing at the Fort Dummer Mills, Brattleboro, Vt. He was formerly employed at the Drayton Mill, Spartanburg, S. C.

Thomas Rowe, overseer of finishing for the Lippitt Woolen Company, Woonsocket, R. I., and who has been connected with the mill for the past twenty years, has resigned his position with that company.

Edward E. Magner has accepted a position as overseer of dyeing at the Holden Leonard Co., Bennington, Vt. He was formerly employed at the Sayles & Jenks Manufacturing Co., Warren, Mass.

George W. Davis, overseer of dyeing at the Holden Leonard Co., Bennington, Vt., has resigned his position with that company.

Sidney H. Little, designer at the Tuxedo Mill, Passaic, N. J., has resigned his position with that company.

William C. Scott, overseer of weaving at the Farwell Mill, Lisbon, Me., has resigned to accept a similar position with the Bates Manufacturing Co., Lewiston, Me.

C. S. Wood has been promoted from overseer

of weaving to superintendent of the Valley Falls Manufacturing Co., Spartanburg, S. C.

J. W. Nipper has been transferred from superintendent of the Palmetto Mills, Columbia, S. C., to superintendent of the Lexington Manufacturing Co., Lexington, S. C.

B. E. Dickens has accepted a position as overseer of weaving at the Carolina Mill, Burlington, N. C.

W. L. Vickery has accepted a position as overseer of weaving at the Hartwell Mill, Hartwell, Ga.

R. L. Linker has been promoted to overseer of carding and spinning at the Barringer Manufacturing Co., Rockwell, N. C.

C. L. Garner has accepted a position as overseer of spinning at the Shaw Cotton Mill, Weldon, N. C.

G. H. Fairbanks has been appointed superintendent of the Fairfield Mills, Winnsboro, N. C. He was formerly employed at the Wallace Mills, Jonesville, S. C.

W. C. Young has accepted a position as overseer of spinning at the Louisville Cotton Mills, Louisville, Ky.

Frank Wilcox, treasurer of the City Manufacturing Corporation, New Bedford, Mass., has tendered his resignation. He accepted this position in 1911. He is succeeded by J. B. Strongman, formerly general manager of the New England Cotton Yarn Company.

T. L. Boone has been appointed general manager of the Knight Woolen Mill, Provo, Utah, to succeed Henry Stringham.

Fred Hathaway, for the past five years second hand in the finishing department at the Lippitt Woolen Company, Woonsocket, R. I., has been appointed overseer of finishing to succeed T. Rowe.

J. J. O'Grady has accepted a position as overseer of carding at the Almonte Knitting Co., Almonte, Ont., Canada. He was formerly employed at the Norfolk & New Brunswick Hosiery Company, New Brunswick, N. J.

John M. Palmer, purchasing agent for the Acushnet and Hathaway Mill, New Bedford, Mass., for the past twelve years, has resigned to accept a position as assistant manager of the New England department for the Borne, Scrymser Oil Company.

S. A. LaRue, designer and assistant superintendent at the Rochdale Mill, American Woolen Company, Rochdale, Mass., has resigned his position with that company. He is succeeded by Wallace Reid, who has been employed for the Josiah Perry Mill at Webster, Mass.

Gladstone Fish has accepted a position as overseer of weaving at the Davol Mill, Fall River, Mass. He was formerly in charge of weaving at the Fort Dummer Mill, Brattleboro, Vt. On his retirement the help in his employ presented him with a watch, chain, charm and fountain pen.

John England, overseer of weaving at the Fabyan Woolen Mill, Medway, Mass., has resigned his position with that company.

Leroy C. Lewis has been appointed superintendent of the U. S. Finishing & Conditioning Company of Patterson, N. J.

Arthur O. Torrey has accepted a position as overseer of finishing at the Ardmore Mill, Yantic, Conn. He was formerly employed at the Merrimack Woolen Company, Dracut, Mass.

At the 10th annual meeting of the Cotton Manufacturing Association of Southern California, which was held at Asheville, N. C., the following officers were elected: President, Capt. Elston A. Smyth of Greenville; vice-president, Col. Leroy Springs of Lancaster; secretary, F. B. Downing of Greenville.

George E. Howard, superintendent of the yarn department at the Cleveland Worsted Mills Company, Cleveland, Ohio, has resigned his position with that company.

Frank Brown has accepted a position as overseer of finishing at the Talbot Mill, North Billerica, Mass. He was fomerly employed for at the A. D. Ellis & Company's Mill at Monson, Mass.

Oscar Bourgeault, overseer of spinning at the Hebron Manufacturing Company, Hebronville, Mass., has resigned his position with that company.

William Meyer, superintendent of the Warren Manufacturing Company, Warren, R. I., has resigned his position with that company.

Charles E. Thomas has been appointed superintendent of the Warren Manufacturing Company, Warren, R. I. He was formerly employed at the Woonsocket Machine & Press Company, Woonsocket, R. I.

George Schlosser, general superintendent of the Woonsocket Rubber Company, has been appointed manager of the Lawrence Felting Company, Millville, Mass., to succeed R. J. Bowes. Mr. Schlosser had charge of three large plants controlled by the U. S. Rubber Company.

James Garvan, formerly overseer of weaving at the No. 3 Harmony Mill, Cohoes, N. Y., has been promoted to the position of assistant superintendent.

W. H. Maslin has been appointed secretary and treasurer of the Atlas Manufacturing Company, Bessemer City, N. C.

W. D. McCombs has been appointed superintendent of the Athens Manufacturing Company, Mills Nos. 1 and 2, Athens, Ga.

J. B. Bailey has accepted a position as overseer of weaving at the Norris Cotton Mill, Cateechee, S. C. He formerly held this position.

A. P .Smith has accepted a position as overseer of weaving at the Maplecroft Mill, Liberty, S. C.

John H. Stevens has been appointed superintendent of the Aseptic Cotton Products Company, Chattanooga, Tenn. He was formerly overseer of carding at the Richmond Hosiery Mill, Rossville, Ga.

R. L. Gaddy has been appointed superintendent of the Huss Manufacturing Company, Bessemer City, N. C.

C. H. Fann has accepted a position as overseer of carding at the King Cotton Mill, Burlington, N. C. He was formerly employed at the Statesville Cotton Mill, Statesville, N. C.

J. C. Platt has been appointed superintendent of the French Broad Manufacturing Company, Asheville, N. C., to succeed E. F. Wellman.

E. Bruce Crosby has accepted a position as overseer of weaving at the Jackson Mills, Monroe, N. C.

C. E. Thomas has been appointed agent of the Prattville Cotton Mills, Prattville, Ala.

A. A. McLean, Jr., has been appointed superintendent of the Atlas Manufacturing Company, Bessemer City, N. C.

E. E. Bowen has been promoted from overseer of weaving at the Victor Mill, Greer, S. C., to superintendent of the Apalache Mills, Arlington, S. C.

F. H. Bromlev has been appointed superintendent of the Maysville Cotton Mill, Maysville, Ky.

A. A. Short has accepted a position as overseer of spinning at the Cowpens Manufacturing Company, Cowpens, S. C.

Joseph Bullard has accepted a position as overseer of dyeing and finishing at the Clinton Textile Mfg. Company of Clinton, Mass.

Nathaniel D. Borden, Jr., treasurer of the Barnard Manufacturing Company, Fall River, Mass., has resigned his position with that company. Bradford D. Davol, president of this company, has been elected temporary treasurer.

Willis E. Johnson, manager of the Manchester Cotton Mill, Manchester, Ga., has been appointed manager of the Mt. Vernon Woodberry Cotton Company of Baltimore, Md. He will also have the management of the Tallassee Falls Manufacturing Company, Tallassee, Ala. He is succeeded at the Manchester Mill by M. M. Trotter, who was formerly at the Parker Cotton Mills Company of Greenville, S. C.

Samuel Harrison has been appointed overseer of the ring spinning department of the Hebron Manufacturing Company, Hebronville, Mass. He has had charge of the mule spinning for several years and the two departments are now under one overseer.

William M. Lasbury, formerly agent of the Arden and Beoli Mills of Fitchburg, Mass., but more recently agent of the Assabet Mill, Maynard, Mass., has been appointed superintendent of the worsted division of the American Woolen Company to succeed Clarence J. Bodfish.

Paul A. Reed, superintendent of the Barnaby Manufacturing Company, Fall River, Mass., has accepted a similar position with the Seaconnet Mill, same city.

Fred Elk has been appointed manager of the Bradford Mill, J. & J. Dobson, Inc., Germantown, Philadelphia, Pa.

Thomas Hunter has been appointed superintendent of the Anchor Webbing Company, Woonsocket, R. I. H. M. Fillebrown, treasurer of this company, has been handling this position but he finds he must relieve himself of some of the responsibility.

John F. Miller, superintendent of the Silver Lake Company, Newtonville, Mass., has resigned his position with that company.

Harvey P. Mallison, superintendent of the Bradford Mill, J. & J. Dobson, Inc., Germantown, Philadelphia, Pa., has resigned his position with that company.

George H. Snow, overseer of carding at the Bridgewater Woolen Co., Bridgewater, Vt., has resigned his position with that company.

Charles J. Newman, Jr., overseer of weaving at the Soule Mill, New Bedford, Mass., has resigned his position with that company.

Arthur F. Caswell has been appointed overseer of weaving and designing at the Soule Mill, New Bedford, Mass. He formerly held a similar position at the Dartmouth Mill, same city.

J. F. Gorham has resigned his position as overseer of carding at the Waypoyset Mill, Central Falls, R. I. He is succeeded by C. A. Knight.

Martin A. Ward, assistant overseer in the weaving department at the Bates Manufacturing Company, Lewiston, Me., has resigned his position with that company.

Frank Breen has accepted a position as overseer of carding at the Broad Brook Company, Broad Brook, Conn. He comes from Glastonbury, Conn.

George Rowe, overseer of the quilling department at the Bates Manufacturing Company, Lewiston, Me., has resigned his position with that company. The help in his employ presented him with a handsome gold watch, chain and Masonic charm.

Edwin Davenport, overseer of dyeing at the Webster Woolen Company, Sabattus, Me., has resigned his position with that company.

Patrick E. Silk has accepted the position of overseer of finishing at the Beaver Brook Mill, Collinsville, Mass. He was formerly employed as second hand at the Faulkner & Colony Manufacturing Company, Keene, N. H.

John W. McKinley has accepted a position as master mechanic for the U. S. Finishing Company's Greenville plant at Norwich, Conn., to succeed John Dawber.

William Stevenson, superintendent of the Spray

Woolen Mills, Spray, N. C., has also been made general superintendent of the Rhode Island Mills, of the same place.

J. A. Parker has accepted a position as overseer of carding at the Judson Mill, Greenville, S. C.

C. W. Phillips has been promoted from assistant superintendent to superintendent of the Rhode Island Mills, Spray, N. C.

W. E. Sudderth has accepted a position as overseer of carding and spinning at the Riverside Mill No. 4, Danville, Va. He formerly held this position.

C. A. Mattison has accepted the position of overseer of weaving at the Courtenay Manufacturing Company, Newry, S. C. He was formerly employed at the Anderson Mills, Anderson, S. C.

L. O. Bunton has accepted a position as designer and overseer of spooling, warping and slashing at the Lauderdale Mills, Meridian, Miss.

C. L. Chandler has been appointed superintendent of the Rhodhiss Manufacturing Company, Rhodhiss, N. C. He was formerly employed as overseer of weaving at the Olympia Mills, Columbia, S. C.

T. H. Henderson, superintendent of the Lynchburg Cotton Mills, Lynchburg, Va., has resigned his position with that company to accept one at Anderson, S. C.

J. M. Kiels has accepted a position as local manager for the Pine Creek plant of the Parker Cotton Mills, Camden, S. C., to succeed the late Winder P. Monroe.

Frank R. Farnham has joined the staff of Walter B. Snow, Publicity Engineer and Advertising agent, Boston, Mass. Mr. Farnham was previously with the McGraw Publishing Co. in charge of Copy Service Department for Engineering Record, Electrical World, Electric Railway Journal, and Metallurgical and Chemical Engineering.

J. Edward Newton has been elected treasurer of the Barnard Manufacturing Co., Fall River, Mass., to succeed Nathaniel D. Borden, Jr.

H. C. Aberle has been elected treasurer and manager of the Brown Aberle Co., manufacturers of hosiery, with mill at Palethorpe and Huntingdon Sts., Philadelphia, Pa., to succeed Henry Brown.

Fred L. Hayes, who has been superintendent of the spinning department at the Nashawena Mills, New Bedford, Mass., has been appointed agent of the Nonquitt Spinning Co., same city.

J. W. Manson has been elected a director of the Waverly Woolen Co., Pittsfield, Me., and W. B. McGilvery has been elected treasurer of this company to fill the vacancy caused by the death of Gordon Dobson.

Edmond J. Doucette, overseer of spinning at the W. E. Tillotson Manufacturing Co., Pittsfield, Mass., has resigned his position with that company.

John Ray, overseer of spinning at the No. 2 Bennett Mill, New England Cotton Yarn Co., New Bedford, Mass., has resigned his position with that company.

George A. Bassett, overseer of carding at the Hecla Mill, Uxbridge, Mass., has resigned his position with that company. He is succeeded by Thomas Riley, who has been second hand for him.

John T. Kirk, who has been superintendent of weaving at the Nashawena Mills, New Bedford, Mass., is to become general superintendent of the plant.

William Noble has accepted a position as overseer of finishing at the A. D. Ellis & Co.'s Mill at Monson, Mass.

Fred Willby, overseer of dyeing at the Merrimack Woolen Co., Lowell, Mass., has resigned his position with that company. He is succeeded by James Horsfall, who was formerly employed at the Squamlake Woolen Co., Ashland, N. H.

Andrew Schultz has been appointed overseer of weaving at the Quaboag Woolen Co., South Monson, Mass.

T. J. McNeely has been appointed superintendent of the Pioneer Cotton Mills, Guthrie, Okla. He comes from Salisbury, N. C.

W. P. Lester has accepted a position as overseer of carding at the Hampton Mill, Granby plant, Columbia, S. C.

W. H. Boynton has accepted the position of treasurer of the Highland City Mills, Talladega, Ala.

W. L. Dumas has been promoted from secretary and treasurer to president of the Highland City Mills, Talladega, Ala.

G. P. Dowling has been elected president of the Ozark Cotton Mills, Ozark, Ala.

T. F. Dooley has been appointed superintendent of the Richmond Hosiery Mills, Rossville, Ga.

William P. Cargill has accepted a position as overseer of spinning at the Hampton Mill, Granby Plant, Columbia, S. C.

J. F. Broom has accepted a position as overseer of spinning at the Riverside Mills, Danville, Va.

T. J. Digby, Jr., has been promoted from second hand to overseer of weaving at the Social Circle Cotton Mill, Social Circle, Ga.

H. A. Shirley has accepted the position of overseer of carding at the Arkwright Mills, Arkwright, S. C.

W. M. Woodleaf has accepted a position as overseer of carding and spinning at the Durham Hosiery Mills No. 6, Durham, N. C. He was formerly overseer of carding at the Peck Manufacturing Co., Warrenton, N. C.

I. P. Chappell has been appointed superintendent of the yarn department at the Russell Manufacturing Co., Alexander City, Ala.

DEATHS.

Charles Holt Barrows, for a number of years superintendent of the Ashland Cotton Company, Jewett City, Conn., died at South Canterbury, Conn., in his eighty-eighth year. He was born in Mansfield, Conn., September 15, 1827, and retired from active mill life several years ago. His daughter and three sons survive him.

James Robert Baird, designer for the Lorraine Manufacturing Company of 72 Leonard St., New York City, and widely known in the textile trade, died recently at St. Mary's Hospital, Orange, N. J., at the age of 64 years.

Gustav T. Kleindienst, superintendent of the Carl Stohn Silk Mill, Hyde Park, Mass., died at home in that place at the age of 37 years. He was graduated from the Bigelow School, class of 1893, and afterwards learned the printer's trade, working at this for a number of years. Eighteen years ago he entered the employ of Carl Stohn and advanced rapidly to the position of superintendent. He is survived by his wife, his brother, and three sisters.

Joseph Stowe Temple, a native of Reading, Pa., and fifty years actively engaged in the manufacture of men's neckwear, died at his home June 24. He was born October 12, 1839. At the time of his death he was senior member of J. S. Temple & Company. His wife and two daughters survive him.

John Sewall Frothingham, of Brooklyn, N. Y., died at his summer home at Bay Shore, L. I. He was a native of Charlestown, Mass., and was associated in business for many years with his father, John W. Frothingham, under the firm name of Frothingham, Baylies & Company, manufacturers of cotton duck goods. His wife and a sister survive him.

Robert Redford, for a number of years agent of the Arlington Mill, Lawrence, Mass., and who has recently been head of the Austin & Young Biscuit Company of Boston, Mass., died at his home in Lawrence, Mass., of apoplexy. Mr. Redford was a prominent member of Masonic circles and several various lodges. He was born in England sixty-nine years ago and came to Lawrence in 1880 to accept a position as superintendent. Later he was appointed agent of the Arlington Mill.

Charles Crawford, president and buyer of the Linenwear Hosiery Company, Clifton Heights, Pa., died June 13 at the age of 55 years. He was a prominent citizen and a member of the Democratic State Committee, also Philadelphia Lodge, No. 2, Elks.

Edward Dickinson Cushman, president of the Monson Savings Bank and a director of the Monson National Bank, died at his home in Monson, Mass., at the age of 62 years. Mr. Cushman was interested some years ago in manufacturing woolen goods at which time he was a member of the firm of S. F. Cushman & Son at Monson. He retired from the woolen business several years ago and leaves a wife, one son and a daughter.

Edward J. Payne died at his home in Newton Centre, Mass. Mr. Payne was born in Lowell in 1844 and received his early education in the public schools. For the past forty-six years he has been connected with the Boston office of the Pacific Mills Co. His wife and a daughter survive him.

Louis C. Billings died at his home in Milford, N. H. He was born Feb. 9, 1835, and when a young man learned the pattern making trade. He was the inventor of the well known balling machine which is now used extensively in textile mills. He is survived by his wife and three children.

Julius Theodore Turner, superintendent of the Massasoit Manufacturing Company, Fall River, Mass., died at his home in that city. He underwent an operation recently with the hope of obtaining relief from his affliction. He rallied for a time but the end came Friday, June 4. He was born in Montville, Conn., October 15, 1845, and came to Fall River to superintend the Massasoit Mill in 1881, a position which he held until the time of his death. He is survived by a brother, Wendell E. Turner, treasurer of the Massasoit Mill, three sons and a daughter.

Stephen C. Meader, agent of the Gonic Manufacturing Company, Gonic, N. H., died at his summer home at York, Me., in his seventy-fifth year. He was born in Rochester, N. H., and for eighteen years was a member of the Rochester City Council. He was twice a representative to the legislature.

George Atkinson, for a number of years connected with the Waltham Bleachery and Dye Works, Waltham, Mass., also with the Massachusetts Cotton Mill, Lowell, Mass., died at the home of his son-in-law, G. O. T. Coale, Charles River Square, Boston, Mass. He is survived by two sons and a daughter.

John A. Fitzgerald, for several years overseer of the twisting, winding and spooling departments at the Hebron Manufacturing Company, Hebronville, Mass., died at his home in that city at the age of 48 years. He leaves a widow, two sons and a daughter.

Willis S. Norris, superintendent of the Lexington Manufacturing Company, Lexington, S. C., died at his home in that city after a brief illness. He had recently been appointed superintendent of this mill.

Charles E. Wheelock, 73 years of age, died at his home in Uxbridge, Mass., after a year's illness. Mr. Wheelock was one of the most promiuent citizens of the town. He was in the woolen manufacturing business several years ago with John R. Scott and operated what is now known as the Waucantuck Mill. Before this he was associated with C. A. & S. M. Wheelock in the same mill. His wife died twenty-four hours previously to his death. Two sisters and two daughters survive him.

New Publications

Any work noticed under this heading can be obtained, postage or express charges free, by sending the price listed to Lord & Nagle Company, 144 Congress St., Boston, Mass. A catalogue of textile books in the English language will be sent free on application.

Table for Breaking Weights of Carded Yarn, 22 by 38; Published by Arthur H. Gulliver, Norwich, Conn. Price $1.

This is a comparative tabulation of the yarn count, the grain weight of a lea (120 yards) of cotton yarn, the breaking strain in pounds and the quotient obtained by dividing the number of pounds by the number of grains in the weight of a lea. For example 120 yards of 50s yarn weighs 20 grains. For a breaking strain of 30 pounds, the quotient would be (30 ÷ 20) 1 1/2, which Mr. Gulliver calls the "break per grain." The table gives a range of breaking strains from 16 pounds to 104 pounds. Other things being equal the strength of yarn decreases as the yarn count increases, and as the weight per lea increases. The quotients obtained by dividing the pounds (breaking strength) by the number of grains per 120 yards are, consequently, fairly constant. The table is intended to aid in keeping the strength of spun yarn up to the standard quotient. Mr. Gulliver gives the following directions for its table: "The yarn is sized in single leas and the breaking strength of each recorded. Then the breaking strength in pounds is divided by the weight in grains of each lea and gives the break per grain as per figures in the table. For any ordinary kind of cloth the filling should not break less than 1 1/4 lb. per grain and the warp preferably 2 lbs., but probably for cloth woven up to 76 picks will give a maximum production and the lowest percentage of seconds at a strength of 1 3/4 lbs. per grain."

Standard Color Card of America, 1915; The Textile Color Card Association of the U. S., Inc., 354 Fourth Ave., New York. Price $1.

This card has been prepared by the Textile Color Card Association, which has the following officers: Frederick Bode, president; John H. Love, 1st vice-president; William Hand, 2nd vice-president; Adolph Mueller, treasurer; Ramsay Peugnet, secretary. It displays 106 shades dyed on silk ribbon each sample showing both a satin and a rib weave. The Association has issued the following letter in connection with the card: "The textile trade and allied industry of the country, for years have been seeking for a standardized list of the American staple colors, but this work was not undertaken until recently, when there was organized for this purpose, the Textile Color Card Association of the United States, Inc., embracing in its organization a group of influential trade organizations, representing large manufacturing interests and many individual firms.

This organization, chartered to perform its work, without profit, assumed the obligation of standardizing a list of the staple colors. The task performed by men of experienced color discrimination and judgment, resulted in the elimination of about two thousand 'off shades' from the list of colors suggested for adoption, and the standardizing of one hundred and six colors now presented in the Standard Color Card of America, the first work of its kind ever attempted.

This card, awaited with great interest, should be in the hands of every firm, department head, salesman and buyer identified with the textile and allied industries in the country, as it marks a new era of simplicity and efficiency in the use and application of the staple American colors.

The general adoption and use of the standard card by the many influential trade interests associated with the work assures for it a strong economic service. With it a manufacturer or merchant will have exact color understanding with all with whom he deals." The purpose of the card is to standardize colors for the textile and allied industries so that the standard name or standard number will always signify the color so designated in this card.

Industrial Notes

INCREASING FACILITIES

The S. K. F. Ball Bearing Company have been obliged to greatly increase their office space in the Hudson Terminal Bldg. Within the last four months they have about doubled their offices so that they now occupy a full wing on the 6th floor of the Hudson Terminal Bldg., 50 Church St., New York.

This company is the only ball bearing company importing bearings from Europe that has not been interfered with by the war. Sweden, being a neutral country, is enabled to send large and regular shipments via Norway and Denmark without entering the war zone. These ball bearings are now very much in demand on account of the high grade of the material and superiority of workmanship. The bearings are made in Gothenburg in a model factory employing 3,000 hands, engaged exclusively in the manufacture of S. K. F. ball bearings.

The E. H. Jacobs Mfg. Co., of Danielson, Conn., has presented to each of its fifty employes a fully paid life insurance policy under what is known as the group insurance system. The amount of the policy is based upon the number of years of service that the individual has been in the employ of the company. Each individual who has been employed for one year or less received a fully paid policy for $100.00, which amount was increased $100.00 a year up to the maximum of $500.00. W. Irving Bullard, the vice-president of the company, states that this is an appreciation of the cordial relations that have long existed between the officers and employes.

THE GRAPHITE LUBRICATING COMPANY

The factory of the Graphite Lubricating Co., Bound Brook, N. J., now occupies an entire city block, which contains two departments, consisting of what are known as the Bound Brook and Nigrum departments.

In the Bound Brook department are manufactured the Bound Brook graphite and bronze oilless bearings, which have been well known throughout the country for more than twenty-five years.

The Nigrum department is new in the sense that the product has been put on the market in the last two years after eight years of their careful experimenting and study. This has grown so rapidly that there is no room at the old plant to take care of its required production, therefore the Graphite Lubricating Company have bought a property for this department that is two miles from the old plant, covering a plot of more than 500 feet by 200 feet, and is situated on the main boulevard to New York, on the tracks of the Central Railroad of New Jersey, Philadelphia & Reading Railroad and the Baltimore & Ohio Railroad. A side track is available from all of these roads. This will be known as their No. 2 plant.

The buildings on the new property consist of one building 30 by 130 feet, and another building 40 by 120 feet, with two stories, which gives ample storeroom. The first mentioned building will be used for the machinery necessary to finish the bushings, while the first floor of the second building will contain a commodious office and what is known as the impregnating room, which will give ample capacity for present requirements. The second floor of this building will consist of a stock room where graphite impregnated wood of all sizes will be carried so that quick delivery can be made of all hurry-up orders.

While the Graphite Lubricating Company are making a specialty of graphite impregnated wooden bushings for all uses such as loose pulleys, friction clutches, ventilating and automobile fans, spindle bearings and saddles, they are also paying particular attention to skewers and dowels, which means a saving of at least 40 per cent. in breakage. Dowels made of this material need no lubrication, and are practically everlasting. They will be glad to furnish further information upon request. They have a booklet covering this proposition, which will be forwarded to any one interested.

MARKET FOR GUAM COTTON AT SHANGHAI

Consul General Thomas Sammons, Shanghai, China

Samples of Guam cotton, as forwarded to the American consulate general, Shanghai, by United States officials, have been examined and found suitable for the manufacture of cotton cloth in China. The Shanghai cotton dealers who made the examination state that if prices are satisfactory they would be prepared to enter into negotiations for the purchase of the entire output of the island of Guam.

CANADA'S HOSIERY AND KNIT-GOODS TRADE

Consul Henry P. Starrett, Owen Sound, Ontario, Feb. 35

The effect of the disturbed conditions in Europe on the knit-goods trade of Canada has been to produce some radical changes in buying. Certain continental goods are no longer popular, buyers even refusing to consider surplus stocks held by importers, and local dealers frankly state that they now wish immediate quotations on these goods from American manufacturers. The foresight of at least one large American hosiery company has resulted in the establishment of a branch factory in Ontario to supply this additional Canadian trade.

When it is stated that Canada's annual purchases of hosiery and knitted goods approximate $20,000,000 the importance of this market as a field for American wares is evident. Canadian factories supply some 65 per cent. of this trade, the remaining 35 per cent. coming in the past chiefly from Great Britain, the United States, and Germany.

Canadian climatic conditions affect the market for all kinds of knitted goods in a larger degree than they do for any other kind of merchandise. The long, cold winters require heavy underwear, hosiery, and sweaters, the summers, although short, demand light-weight goods; the spring and fall seasons call for medium weights.

In 1900 there were 52 Canadian factories producing a total of $3,857,519 worth of hosiery and knitted goods annually. In 1911 (the latest available statistics) there were 68 factories (55 of which were in Ontario and 10 in Quebec), with a total capitalization of $11,938,029, employing 8,364 persons, the value of the annual output being $13,393,854. It is estimated that these factories produced during the past season over $15,000,000 worth of knitted goods of all kinds. The rapid growth of the industry may be ascribed to a high protective tariff and other measures enacted for the benefit of domestic industries generally.

Canadian factories turn out large quantities of medium-grade cotton hosiery and underwear, and they have enjoyed a fair share of the total trade in medium-weight woolens and low-grade heavy mixtures Silk goods, however, have largely been imported.

Knit goods are imported by jobbers or bought on order through manufacturers' agents located at Montreal and Toronto, the jobbers' profit being approximately 10 per cent. and the agents' commission varying from 4 to 7 1/2 per cent., according to the character of the line handled. All such goods are sold to dealers on terms of 3 per cent. 30 days, net 60 days, open credit, quotations being f. o. b. jobber's or Canadian manufacturer's shipping point. Foreign manufacturers' terms to importers, both jobbers and dealers, are practically the same, although the practice of advance dating of invoices for early season purchases really gives importers 1 to 2 months' additional credit. Some of the larger dealers save commissions and jobbers' profits by maintaining purchasing agents in England, Scotland, and France, in which case payments are made direct to the foreign manufacturer or his agent.

The grades of underwear most in demand are men's balbriggan, to sell at 50 cents a garment; men's winter all-wool and mixed, to sell at $1; women's cotton open mesh and plain knit, to sell at 25 cents; women's winter all-wool and mixed, to sell at $1 per garment. Popular men's sizes are 36 to 40 for shirts and 34 to 38 drawers; women's, 36 to 38. The bulk of the trade in hosiery is in cotton-and-wool mixed socks for men, to retail at 25 cents; cashmere, 35 cents; women's cotton stockings, 2 pairs for 25 cents; and lisle stockings, 35 cents; the sizes most in demand are 10 to 11 for men and 9 to 9 1/2 for women.

The Canadian customs tariff rates on knitted goods are: On underwear and knitted goods not otherwise provided for, 27 1/2 per cent. when coming from Great Britain, and 42 1/2 per cent. ad valorem when from the United States; on socks and stockings, 30 per cent. when from Great Britain and 42 1/2 per cent when from the United States. These rates include the increases effective February 12, 1915.

[A list of net wholesale prices in Canada for representative lines of knitted goods may be inspected at the Bureau of Foreign and Domestic Commerce and its branch offices. A list of dry-goods and men's furnishings dealers of the Owen Sound consular district may be obtained from the Bureau of Foreign and Domestic Commerce or its branch offices. These names form part of a very complete trade directory of his district prepared by Consul Starrett, covering all towns of more than 1,000 population and embracing many lines of commercial activity.]

CASH DEMANDED FOR COTTON GOODS AT HONGKONG

Consul General George E. Anderson, Hongkong, April 6

One of the most important steps taken in the cotton piece-goods business in south China in many years was the organization this week of importers of piece goods in Hongkong, now practically exclusively British firms, as a result of war conditions, which determined by formal vote that "the time is now opportune, in the best interests of the trade, for abandoning the pernicious credit system, . . . and pledges itself in future to sell piece goods and fancies on a strict cash basis."

This determination has been accepted as the policy of the trade in south China henceforth, and there seems to be no question that it will be lived up to by all the dealers now in the trade. Since, moreover, the trade generally, without respect to nationality and previous to the opening of the war found itself in serious difficulties as a result of excessive credit allowances and has been seeking means for years of ending the abuses, it seems likely that there will be no resumption of such trade conditions in the future. For several years credit allowances on piece goods in this market have been so great as to be all but ridiculous. Six months has been considered a standard allowance, and usually this period has been exceeded. While interest usually has been charged on goods from the date of the invoice, the possibilities of evading contracts, of overtrading and unsound speculation, and of shifty and unsatisfactory trading generally afforded by such credit terms have led to a very unsatisfactory condition of the trade generally.

The failure of an important piece-goods firm last week brought matters to a crisis. The adoption of the new system will doubtless make itself felt in American cotton piece-goods circles in a healthier tone of the trade generally, and in placing firms offering American goods more nearly on an equality as regards terms with the manufacturers of other countries.

The Hongkong importers have also formally decided that, as a result of prevailing conditions in the Hongkong market during the war and to assist the situation, interest at the rate of 7 per cent. per annum will be charged on all goods at present on order on credit terms and undelivered from a date not more than nine months after date of arrival, such interest to include warehouse and other charges. This agreement is not to affect present contracts.

The course of the cotton-goods market in south China so far the current season has been somewhat more favorable than was anticipated. Stocks have been moving very slowly and for the time being trade is dull, but the undertone of the market is steadier and more satisfactory and the promise of the immediate future is more favorable. There is little prospect of satisfactory general business, but the chance of a very unfavorable turn of things is much less pressing than it was. On the whole, dealers are encouraged and the tone of the market is healthier.

ANNOUNCEMENT

The following notice has been sent to the trade:

Mr. K. E. Kersten, who is thoroughly familiar with our business, has this day been appointed branch manager of the Boston Belting Co., 172 West Randolph St., Chicago.

A large and varied assortment of our well known brands of high grade belting, hose and packing is constantly carried by us in Chicago to facilitate the prompt shipment of staple goods.

By careful, competene and courteous attention to all inquiries and orders, we hope to merit your confidence and your patronage.

Boston Belting Co.,
Thomas A. Forsyth, Pres. and Gen'l Mgr.

The Powell Accessories for Oil Wells and Refineries; The Wm. Powell Co., Cincinnati, O.

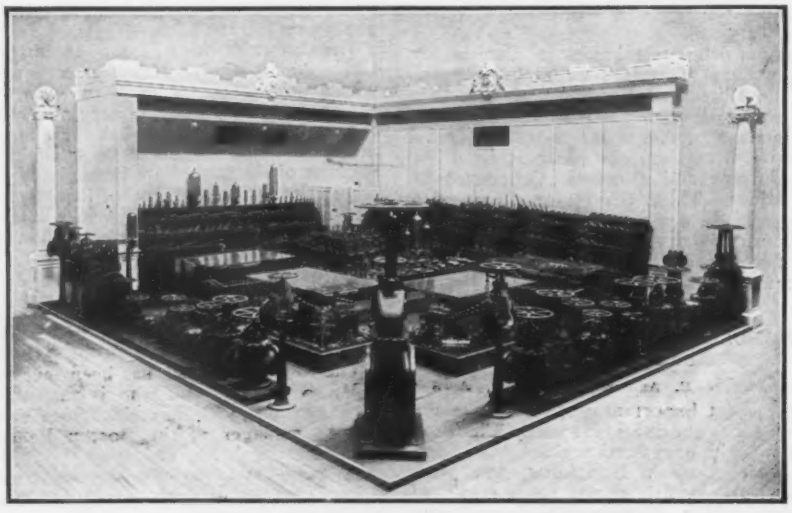
A 20-page booklet describing and illustrating the various kinds of valves manufactured by the Wm. Powell Co. In addition to the cocks, valves and injectors described, they manufacture a general line of valves and fittings for oil wells and refineries. Also brass and iron globe angle, cross gate and check valves; whistles and whistle valves; lubricators, single and double connection; glass body and brass oil cups; grease cups for every purpose; brass and iron fittings, injectors unions and cocks. A copy of the booklet can be had on application.

LUNKENHEIMER EXHIBIT

PANAMA-PACIFIC INTERNATIONAL EXPOSITION

A glance at the Lunkenheimer exhibit in Machinery Palace, impresses the visitor with the large and complete variety of engineering appliances which The Lunkenheimer Company manufacture. Although an exceptionally large number of articles are displayed, their arrangement is such as to lend an artistic, though neat appearance to the exhibit as a whole.

In great variety are displayed bronze, iron, "puddled" semi-steel and cast steel globe, angle, cross, check, gate, balanced throttle and non-return safety boiler stop valves; also bronze and iron pop safety, relief and blow-off valves; water columns and gauges; whistles, ground key work, injectors and ejectors; bronze fittings and unions; cylinder lubricators, oiling devices, oil and grease cups; automobile and motor boat specialties, etc.



THE LUNKENHEIMER EXHIBIT AT THE PANAMA-PACIFIC EXPOSITION

An examination of the articles displayed makes it evident that strength, durability and expert workmanship are prime factors in their construction.

The Lunkenheimer Company has its executive offices and factories in Cincinnati, Ohio, although it maintains branch offices and selling agencies everywhere. Their claim of being the largest manufacturers of high grade engineering specialties in the world seems to be substantiated by their large and elegant display. Whether interested in engineering appliances or not, this exhibit is well worth seeing.

THE TERRY STEAM TURBINE COMPANY

Joseph Battles has been appointed district sales manager for the Terry Steam Turbine Co., Hartford, Conn. Mr. Battles' territory includes the States of New Mexico, Colorado, Wyoming, and the western portion of Nebraska. His address is 326 First National Bank Building, Denver, Colo.

LOWELL TEXTILE SCHOOL

At the graduation exercises of the Lowell Textile School, held on June 4, degrees were conferred on the following graduates:

Edwin Frederick Ernest Cosendai, Lowell, Mass. Bachelor of Textile Dyeing. Thesis, "Causes and Prevention of Fires in Dry Cleansing Establishments."

Oliver Fellows Lane, Lowell, Mass. Bachelor of Textile Dyeing. Thesis with J. W. Sawyer, "Comparative Study of American Coal Tar."

Frank Robert McGowan, Lowell, Mass. Bachelor of Textile Engineering. Thesis, "Comparative Power Tests of a Shoddy Picker with Plain and Ball Cylinder Bearings."

Julius Ellis Neyman, Lowell, Mass. Bachelor of Textile Dyeing. Thesis, "Preparation of a Direct Cotton Black Starting with Primary Coal Tar Derivatives."

Edward Rich, Lowell, Mass. Bachelor of Textile Dyeing. Thesis, "The Manufacture of Sulphur Dyes."

Joseph Warren Sawyer, Lawrence, Mass. Bachelor of Textile Dyeing. Thesis with O. F. Lane.

Diplomas Awarded as Follows
June 4, 1915.

Thomas Harrington, Cambridge, Mass. Chemistry and Dyeing. Thesis, "The Preparation of R. Salt."

Philip Francis O'Brien, Wayland, Mass. Wool Manufacture. Thesis, "The Manufacture of a Worsted Suiting."

Awards for Proficiency in Chemistry
First and Second Year.

First: Ten dollars to the student taking the regular Chemistry and Dyeing Course who shall be considered as having attained the highest

scholarship in First Year Chemistry. Awarded to John Francis Fitzgerald.

Second: Five dollars to the student taking the regular Chemistry and Dyeing Course who shall be considered as having attained the second highest scholarship in First Year Chemistry. Awarded to George Henry Johnson.

Third: Ten dollars to the regular student of the Chemistry and Dyeing Course who shall be considered as having attained the highest scholarship during the Second Year. Awarded to William John Baker.

Fourth: Five dollars to the regular student of the Chemistry and Dyeing Course who shall be considered as having attained the second highest scholarship during the second year. Awarded to Howard Billings. Honorable mention of Walter Wellington Powers.

The above sums to be invested in books.

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THE SITUATION IN CHINA

China is a very large consumer of indigo, indeed she uses seven times as much as the United States, her imports of dyes in 1913 being:

Synthetic Indigo	$7,172,206
Vegetable Indigo	41,535
Aniline Dyes	3,943,329
Total	$11,157,070

which is 22% more than our own importations of coal tar dyes, including indigo.

Consul General George E. Anderson, Hongkong, under date of March 1st, reports that the present high price of synthetic indigo has caused the Chinese to resume the production of natural indigo, which has been a large and staple industry in China for many centuries. It is impossible to but it will materially affect the indigo market of the world, if the present high prices continue. estimate the increase in the production of the dye,

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A TRAIN LOAD OF KISSELS

Eighty KisselKar trucks left the factory of the Kissel Motor Car Company in one train load last week. The entire train was made up of flat cars, two trucks being loaded on each car. The shipment was consigned to the government of Serbia and consisted of thirty ambulances and fifty heavy service vehicles for commissary use.

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*Pennsylvania, Phoenixville. It has not been definitely decided when the new mill for the Watco Knitting Company will be erected. They state that the new plant will be on Wheatland St., Phoenixville, and probably a building will be erected in the near future. This concern manufactures ladies' underwear, and is located at present at 110 Lancaster Ave., Downington, Pa. The equipment consists of 12 knitting and 12 sewing machines. William M. Anglemoyer is president and Norman I. Gruber is treasurer, superintendent and buyer. Robert C. King, N. Y., sells the product.

FOREIGN TRADE OPPORTUNITIES

The Bureau of Foreign and Domestic Commerce, Washington, D. C., has published the following items regarding opportunities for foreign business in textile materials. Reserved addresses may be obtained from the Bureau and its branch offices. Request for each opportunity should be on a separate sheet and the file number given.

Linen and cotton sewing thread, No. 16587: An American consular officer reports that there is an urgent demand in France for linen and cotton sewing thread.

Woolen and cotton waste, No. 16732: A firm of manufacturers' agents in Canada desires to be placed in communication with American manufacturers and exporters of woolen or packing waste and cotton machinery waste, white and colored.

Hosiery and underwear, No. 16690: A firm in the Netherlands wishes to represent American manufacturers of hosiery and underwear.

Hosiery, No. 16588: A business man in France desires to act as agent for American exporters of silk hosiery.

Cotton prints, No. 16838: A business firm in Zanzibar desires to receive quotations and full information relative to cotton prints similar to the samples which may be examined at the bureau's offices in New York City and Boston.

Hosiery, carpets, etc., No. 17010: An American consular officer in England states that a firm of importers of oriental carpets is desirous of securing agencies from American manufacturers of soft goods, hosiery, carpets, etc.

Corduroy cloth, No. 16584: A business man in southern Europe desires to place an order for from 10,000 to 20,000 pieces of corduroy velveteen.

Crepe, No. 16638: A firm in France desires to receive the names and addresses of American manufacturers of "crepe noire" (black crepe).

Fancy linen goods, No. 16999: An American consular officer in England reports that a firm in his district, which has been engaged for about 30 years in the sale of linen and cotton textiles, especially table damask, towels, and upholstery goods, is desirous of representing American manufacturers of fancy linen goods, such as table covering, etc.

Hosiery, knit goods, etc., No. 16626: A commercial agent in France, who has been selling to the South American markets for about 20 years, desires to secure agencies from American manufacturers of hosiery, underwear, knit goods, cotton fabrics for linings, shirtings, flannelettes, cotton materials for dresses and gowns, bath robes, etc. He desires to have goods shipped direct from the United States to South America.

Dress goods, No. 16933: A business man in one of the insular possessions is establishing a wholesale depot for fancy and plain dress goods of all kinds, such as lawns and voiles.

Cotton yarn, No. 16923: A firm in Germany wishes to receive addresses of American manufacturers of cotton yarns, Nos. 10-24 and 36-44.

Worsted yarns, No. 16698: An American consular officer in India reports that a firm in his district desires to purchase a quantity of worsted yarn for making hosiery.

Yarn and leather, No. 16781: An American consular officer in Switzerland reports that a business man in his district desires to communicate with American manufacturers of cotton, woolen, and silk yarns, especially those used by manufacturers of knitted goods. He desires to secure an agency for these commodities.

Hosiery, No. 16700: A wholesale underwear dealer in England desires to communicate with American manufacturers of ribbed combination and bodices for women, and mercerized plain and lace lisle hose, with seamless feet.

Cotton thread, No. 16906: An American consular officer in Germany reports the name and address of a business man in his district who desires to enter into communication with manufacturers of cotton thread.

Cotton and woolen goods, dyes, paints, etc., No. 17060: A firm of general importers in China desires to be placed in communication with American manufacturers and exporters of cotton piece goods, woolen goods, dyes, paints and oils.

Underwear, No. 16881: An American consular officer in Ireland transmits the name and address of a manufacturer's agent who desires to communicate with American manufactures of woolen underwear. The man desires a commission ranging from 2 1/2 per cent. to 5 per cent., depending on the value and the class of goods.

Cotton felt, No. 16882: A business man in Italy desires to be placed in communication with American manufacturers and exporters of cotton felt for the graphic industry.

Elastic, No. 16599: A business in Italy desires to communicate with American manufacturers of elastic.

Hosiery, etc., No. 16597: A business man in Austria solicits offers from American manufacturers and exporters of silk hosiery, underwear, silk ties and children's wearing apparel.

Khaki cloth and machinery, No. 16461: A South American reports a firm desires to purchase large quanties of khaki cloth and machinery for making same.

Hosiery, No. 16595: A business man in Italy desires to obtain the agency for the sale of hosiery.

Hosiery, No. 16802: A manufacturer's agent in Canada desires to communicate with American manufacturers and exporters of lisle, cotton, and silk hosiery for women.

Yarn and machinery, No. 16749: A firm in China desires to communicate with American exporters of cotton yarns.

Clothing, No. 16724: An American consular officer in Colombia reports that a resident of his district is opening a store for the sale of clothing, toys and other supplies for children.

Cotton goods, No. 16725: A trading company in India desires to be placed in communication with American manufacturers and exporters of gray and white shirtings, nainsooks, mulls, scarfs, cotton and woolen blankets and rugs, and prints.

Knit goods, No. 16604: A manufacturer's agent in England would like to correspond with American manufacturer of knit goods, either as agent or buying outright.

Hosiery, etc., 16486: A business man in France wishes to receive samples and quotations from American manufacturers of woolen and cotton half hose, sewing thread, and cotton velvet corduroy.

Dress goods, No. 16487: An American consular officer in France reports that there is a demand for women's dress goods in his district.

Woolen yarns, No. 16509: A firm of spinners in Switzerland desires to purchase woolen yarns suitable for both hand and machine use.

Lace, No. 16560: A firm in England desires to secure a market in the United States for the sale of pillow lace.

Hosiery and underwear, No. 16453: A manufacturers' agent in England has asked to be put in touch with American manufacturers of hosiery and underwear.

Knitting needles, No. 16477: An American consular officer in India transmits a report relative to an opportunity to sell knitting needles.

Clothing, No. 16685: A firm in the West Indies desires to receive quotations on medium-priced pants for children.

Underwear and dry goods, No. 15783: The Bureau of Foreign and Domestic Commerce is in receipt of a communication from a wholesale merchant in one of the neutral countries of Europe, stating that he desires to establish commercial relations with American manufacturers and exporters of cheap cotton-fleeced underwear and general dry-goods lines. He also wishes to receive trade journals which are published in the interest of the business in which he is engaged. He states that he can furnish foreign and American references.

Cotton yarn, cornstarch, lubricating oils, etc., No. 15792: The Bureau of Foreign and Domestic Commerce is in receipt of a letter from a commission merchant in one of the neutral European countries, stating that he wishes to secure the names and addresses of producers and exporters of cotton yarn, cotton cloths, cottonseed oil and cake, glucose, cornstarch, linseed cake, lubricating oils, tallow, soap, etc.

Cloth, No. 16298: A commission merchant in France has transmitted a number of samples of cloth, which may be examined at the Bureau of Foreign and Domestic Commerce or its branch office, on which he requests quotations from American manufacturers and exporters of similar material. References are given.

Boots and shoes, textiles, etc., No. 15977: An American consular officer in the West Indies reports that a commission merchant in his district desires to represent American manufacturers of boots and shoes, hosiery, etc.

Tent material, No. 16198: One of the commercial attaches of the Department of Commerce in the Far East reports the name and address of a merchant who states that he can conclude a contract for 3,000 to 5,000 yards of brown and white canvas for military tents. Samples of the material desired may be examined at the Bureau of Foreign and Domestic Commerce and its branch offices.

Hosiery, No. 16229: An American consul in France reports that a commission merchant in his district is anxious to represent American manufacturers of hosiery of all kinds. Reference is given.

Cotton ducks and sheetings, and bagging, No. 16330: An American consular officer in England reports that a firm of manufacturers of machinery cloths desires to be put in touch with American manufacturers of cotton ducks and sheetings up to 130 inches wide, similar to and heavier than the samples, which may be examined at the Bureau of Foreign and Domestic Commerce and its branch offices. The firm also wishes to correspond with manufacturers of cotton leno bagging 24 inches wide.

Cotton and silk yarns, No. 16191: A commission agent in Russia has informed an American consul that he desires to communicate with firms exporting cotton yarn, single thread from No. 20 to 160 and double thread from No. 40 to 160; also silk yarns. Quotations and samples should be submitted at once.

Woolen yarn, No. 16344: An American consular officer in Russia reports that a business man in his district desires to be placed in communication with American exporters of woolen yarn. It is stated that samples are being forwarded. The samples may be examined at the Bureau of Foreign and Domestic Commerce or its branch offices when they arrive. Prices and weights, etc., should be stated in Russian equivalents, and quotations should be made c. i. f. Russian ports. Reference is given. Correspondence may be conducted in English.

Hosiery and hand bags, No. 16209: The Bureau of foreign and Domestic Commerce is in receipt of a letter from an American business firm stating that it is in receipt of inquiries from Great Britain for catalogues, prices, etc., on lisle hosiery, silk and leather hand bags for women. Payment will be made in cash against documents in New York City. Prices should be quoted c. i. f. destination.

Cloth, thread, and yarn, No. 15964: An American consular officer in Europe reports that a commission merchant in his district wishes to communicate with American manufacturers of cloth similar to the samples which may be examined at the Bureau of Foreign and Domestic Commerce or its branch offices. He also desires to represent manufacturers and exporters of thread and yarn and electrical porcelain goods. Reference is given.

Hosiery, ready-made clothing, etc., No. 16284: An American consular officer in France reports that a business man in his district desires to represent American manufacturers of cotton hosiery and ready-made clothing for women. Correspondence should be conducted in the French language, and c. i. f. quotations should be stated in French currency. Cash will be paid against shipping documents. Bank reference given.

Jute bagging, starch, castor oil, etc., No. 16119: A firm in Switzerland has informed an American consul that it wishes to be put in touch with American manufacturers which are in a position to deliver starch of corn, wheat, and potatoes; jute bagging, castor oil, and aluminum sulphate.

Facts and Gossip.

Georgia, Columbus. The yarn mill project started in Phoenix City, Ala., several weeks ago has been dropped, it is understood, but a new project for establishing a knitting mill there has been taken up.

*Michigan, Eaton Rapids. The Big Rock Knitting Company, which has moved to the Belnap Bldg., East Hamlin St., Eaton Rapids, from Chesaning, Mich., will continue under the old name, use the old equipment, and manufacture sweater coats which will be sold through E. W. Lewellen, 69 University Bldg., Detroit. Electric power will be used. W. F. Hall is manager and buyer. They use 2/20 wool, and 2/80 worsted yarns. For some time the concern has bought yarn from the Eaton Rapids Woolen Mills and among the reasons for the change is the saving of carriage on material.

New York, New York City. The H. W. Knitting Mills, Henry Weiss, proprietor, manufacturers of men's, women's and children's sweaters, are located in their new quarters at 550 Broadway. They were formerly located at 72 Lewis St.

New York, Troy. A large order for export has been received by the Rob Roy Hosiery Company, manufacturers of flat, wool and merino underwear, which will require 5 or 6 weeks for completion.

*New York, Washington Mills. The matter of confirming the sale of the plant of the Imperial

Textile Company, in bankruptcy, to William E. Nelson, one of the creditors, is being held open on the ground that another creditor may make a higher bid.

*Ohio, Cleveland. The N. J. Rich Company do not anticipate building another plant at once as a result of the recent incorporation of the business. They have added considerable machinery and are now making a complete line of fancy knit goods consisting of sweater coats, bathing suits, jersey sweaters and mufflers. There has been subscribed for and issued $200,000 preferred stock and $220,000 of common stock.

Pennsylvania, Montello. A large order for export has been received by the Montello Knitting Mills to be completed October 1, according to report. This concern took over the plant of the Highland Hosiery Company several months ago.

Pennsylvania, Philadelphia. The Besfit Underwear Company, which recently applied for a charter, will take over and operate the Wakefield Knitting Mill, at 5155 Wakefield St., Germantown, where it will continue the manufacture of ladies' cotton ribbed underwear under the management of H. S. Townsend, the plant containing 33 knitters and 53 sewing machines. The production is sold through N. Y.

*Pennsylvania, Reading. It is understood that the local branch plant established at 6th and Chestnut Sts. by William F. Taubel, Inc., of Riverside, N. J., will operate 400 knitting machines on plaited half hose. The goods will be shipped to one of the Pennsylvania plants to be finished. As noted in recent reports other branches are being established by William F. Taubel, Inc., at Lebanon, Pa., Trenton, Millville and Camden, N. J.

Pennsylvania, Williamsport. Report has it that the Royal Braid Company, which recently went into the hands of a receiver, will not be started up again. It is also said that the building occupied by them has been sold to other parties and that the equipment will also be sold in order that the mill may be vacated to give the new owners possession.

Rhode Island, Pascoag. The carding department of A. L. Sayles & Sons, is running overtime on account of an order for uniform cloth for export.

Rhode Island, Providence. There will be no change in the business of the Rhode Island Rug Company as a result of the recent incorporation of the business with capital stock of $50,000. A plant is operated at 87 Cromwell St., manufacturing rugs from old carpets under the name of the Rhode Island Rug Works.

TREASURY DECISIONS

T. D. 35459. May 27, 1915. Clocked silk hose. Silk hose ornamented with what is known as "clocking" which has been repeatedly held to be a form or species of embroidery, are, in the absence of a more specific designation, dutiable as silk wearing apparel, embroidered, at the rate of 60 per cent. ad valorem under paragraph 358, tariff act of 1913. In the matter of protest 757578 of B. Altman & Co. against the assessment of duty by the collector of customs at the port of New York.

COURT DECISIONS

T. D. 35475. Nettings, Jacquard figured. Carter & Son v. United States. Jacquard figured upholstery goods. The merchandise consists of nettings, all of which are jacquard figured, and the relevant paragraphs in tariff act of 1913 are 258 and 358. "Jacquard figured upholstery goods" in paragraph 258 restricts the operation of the term to goods whose chief use is as upholstery goods, the precise character of these upholstery goods being there defined, and accordingly the description applies to articles that might otherwise be appropriately designated nets or nettings under paragraph 358.

T. D. 53477. May 21, 1914. Bassine fiber. Bassine or Palmyra Fiber. These goods are not sufficiently similar in material, quality, texture or the use to which they may be applied to the istle or Tampico, dressed, dyed or combed, of paragraph 285, tariff act of 1913, to be dutiable thereunder by similitude, nor is their quality such as to warrant such an assessment. They are dressed goods, and are dutiable as an unenumerated manufactured article under paragraph 385 of the act. Cone v. United States.

T. D. 35501. Cotton Cloth. United States v. Sherman & Sons Co. et al. Figured woven cotton goods. "Cotton cloth woven in the piece" is more specific in describing the goods here than "manufactures of cotton, jacquard figured." "Cotton cloth woven figured" exactly describes the merchandise and this is "in the piece." The provisions for cotton cloth in paragraph 252, tariff act of 1913, as defined in paragraph 253, control.

T. D. 35511. Drawback on towels. T. D. 35240 of March 22, 1915, extended to cover towels manufactured by the H. W. Baker Linen Co., of New York, with the use of imported linens.

T. D. 35513. Drawback on hosiery. Drawback on hosiery manufactured by the Brooks Hosiery Mills, of Philadelphia, Pa., with the use of imported artificial silk. T. D. 35481. Drawback on bags. T. D. 35413 extended to cover bags manufactured by the Bemis Bros. Bag Co. from imported twill burlap at their San Francisco, Cal., factory.

BOARD OF APPRAISERS

T. D. 35498. June 4, 1915. Silk veils. Woven articles of different colors, of light texture, composed wholly of silk, measuring from 75 to 100 centimeters in width and from 100 to 170 centimeters in length, some of which have fancy forders and others are hemstitched, which are susceptible of use as a covering for the face, and were formerly used, but are now chiefly used by women when automobiling as a protection for the head and hair, are dutiable as silk veils at the rate of 60 per cent. ad valorem under paragraph 358, tariff act of 1913.

Recent Textile Patents

ABSORBENT COTTON Wrapping Machine, Automatic. 1,140,044. Ignatius Kornbluh, New York.

BOBBIN. 1,140,352. George H. Benjamin, New York.

BOBBIN. 1,140,868. Walter E. Bennett, Carbondale, Pa.

BOBBIN HOLDER. 1,140,203. Isaac Snow, Lawrence, Mass.

BRAIDER, Circular. 1,141,382. Adolph L. De Leeuw, Cincinnati, O.

BRAIDING MACHINE. 1,141,555. Emil Krenzler, Barmen, Germany.

CLOTH CUTTING Machine, Electric. 1,141,087. Nicolas Komow, New York.

CLOTH WINDING Machines. 1,139,513. David Gessner, Worcester, Mass.

COATING WOVEN Fabrics, Paper and the Like. 1,141,224. Otto E. Wawrziniok, Dresden, Germany.

DYEING MACHINE. 1,141,301. Samuel Barker, Providence, R. I.

DYEING MACHINE, Circulating. 1,142,476. Thomas Allsop, Philadelphia, Pa.

DOFFING MACHINE. 1,142,015. Arthur G. Boozer, Jr., Tucapau, S. C.

DOFFING MACHINE for Spinning Frames. 1,142,013. Arthur G. Boozer, Jr., Tucapau, S. C.

DYEING MACHINES, Spreader Attachment for Collapsible Beams for. 1,140,283. Jesse M. Payne, Summerville, Ala.

FABRIC FOLDING Machine. 1,140,388. William S. Mills, Bridgeport, Conn.

KNITTING MACHINE. 1,140,709. John B. Paxton, Philadelphia, Pa.

KNITTING MACHINE. 1,140,784. Frank B. Wildman, Norristown, Pa.

KNITTING MACHINE, Automatic Circular. 1,140,269. John Lawson, Central Falls, R. I.

KNITTING MACHINE Blower. 1,141,034. Charles A. Bazino, North Bennington, Vt.

KNITTING MACHINE, Dogless Circular. 1,140,790. George L. Ballard, Norristown, Pa.

KNITTING MACHINE, Drop Stitch. 1,140,270. John Lawson, Central Falls, R. I.

KNITTING MACHINE, Welt. 1,140,783. Frank B. Wildman, Norristown, Pa.

LOOM. 1,141,635. Albert H. Henderson, Baltimore, Md.

LOOM ATTACHMENT. 1,142,624. Peter Reilly, Passaic, N. J.

LOOM, Automatic Weft-replenishing. 1,142,725. Jonas Northrop, Hopedale, Mass.

LOOM, Filling Replenishing. 1,140,520. Thelesthare Martin, Lawrence, Mass.

LOOM for Weaving Tufted Fabric. 1,142,170. George F. Hutchins, Worcester, Mass.

LOOM PATTERN Mechanism. 1,142,161. Albert A. Gordon, Jr., Worcester, Mass.

LOOM SHUTTLE. 1,141,186. Patrick F. Higgins, Fall River, Mass.

LOOMS, Weft Bobbin Exchange Device for. 1,142,569. Albert G. Koechlin, Basel, Switzerland.

LOOM, Weft Replenishing. 1,142,743. Horace Wyman, Worcester, Mass.

PILE FABRIC. 1,142,149. George Crossland, Worcester, Mass.

PILE FABRIC, Woven. 1,139,495. George Crossland, Worcester, Mass.

SHUTTLE THREADING Attachment. 1,140,287. W. J. Roberts.

STOCKING. 1,142,774. John P. Nissen, Stapleton, N. Y.

SHUTTLE MOTION, Positive High Speed. 1,142,059. Charles R. Saatweber, Paterson, N. J.

SPINNING FRAME Doffing Machine. 1,142,011. Arthur G. Boozer, Jr., Tucapau, S. C.

STITCHING MACHINE. 1,140,531. Frank A. Risberg, Chicago, Ill.

SEWING MACHINE for Attaching Labels. 1,142,057. Arthur Rosenthal, Grand Rapids, Mich.

STITCHING MACHINE, Button. 1,140,482. Fred A. Read, Lynn, Mass.

SPINNING MACHINES, Protecting Device for Cotton. 1,141,457. Beirne Gordon, Jr., Utica, N. Y.

STOCKINGS From Forms, Means for Removing. 1,141,778. Harry Coulston, Philadelphia, Pa.

STOCKINGS From Forms, Process of Removing. 1,141,777. Harry Coulston, Philadelphia, Pa.

TEXTILE APPARATUS Stopping Mechanism. 1,142,751. Randolph Crompton, Chatham, Mass.

TEXTILE FABRIC. 1,139,705. Frank G. Murch, Methuen, Mass.

TEXTILE APPARATUS, Stopping Instrumentality and Mechanism for. 1,142,752. Randolph Crompton, Chatham, Mass.

TEXTILE MACHINE Stop Mechanism. 1,140,063. Joseph C. Pratt, Philadelphia, Pa.

TUBULAR FABRIC and Knitting the Same, Reinforced. 1,141,971. John W. Meetler, East Millstone, Milltown, N. Y.

UNDERGARMENT. 1,140,122. Lindsay H. Crawford, Chicago, Ill.

UNDERGARMENT, Woman's. 1,139,652. Edward Emmers, Royersford, Pa.

UNDERWEAR. 1,140,121. Lindsay H. Crawford, Chicago, Ill.

UNDERWEAR. 1,141,636. Mark M. Henderson, New York.

WINDING MECHANISM. 1,141,892. John V. Cunniff, Fall River, Mass.

WINDING MECHANISM. 1,141,890. Charles B. Webster, Fall River, Mass.

WEFT DETECTING Machine. 1,142,121. Eppa H. Ryon, Waltham, Mass.

WINDING MACHINE. 1,141,583. Claes Ryden, Cranston, R. I.

WEB CUTTING Mechanism. 1,140,392. Abraham Novick, New York.

WOVEN FABRIC. 1,141,665. William G. Stewart, Chester, Pa.

WINDING MECHANISM for Forming Yarn or Thread Packages. 1,141,876. James K. Lanning, Dorchester, Mass.

WINDING MACHINE for Ribbons, Laces, or the Like. 1,141,646. Ernest J. Marcouiller, Oconto Falls, Wis.

TRADE MARKS RECENTLY FILED FOR REGISTRATION

73,837. Clothing. Mark: Camello. Owner: Albert Mathias & Co., El Paso, Tex.

82,766. Ladies' garments. Mark: Teco. Owner: Torrey-Epstein Co., Boston, Mass.

83,702. Cotton duck. Mark: Majestic. Owner: Turner, Halsey Co., New York.

83,902. Cotton piece goods. Mark: El Volvan. Owner: Jackson Co., Nashua, N. H.

83,985. Ladies' and children's dresses. Mark: Mayflower. Owner: Textile Products Co., Boston, Mass.

84,175. Hosiery. Mark: 414. Owner: William B. Kohlman, New Orleans, La.

84,204. Ladies' dresses. Mark: "Chin Chin". Owner: M. & H. Rentner, New York.

71,205. Men's clothing. Mark: Fair and Square. Owner: Briede & Rogovsky, Chicago, Ill.

79,631. Sweaters. Mark: Lion Mills. Owner: Heilpern & Gross, Hartford, Conn.

80,560. Clothing. Mark: Tropicloth. Owner: Cohen, Goldman & Co., New York.

81,742. Cotton piece goods. Mark: Wind-O-Klean. Owner: Cleveland-Akron Bag Co., Cleveland, O.

83,283. Knitted underwear. Mark: Birge. Owner: The N. L. Birge Sons Co., Bristol, Conn.

83,734. Woven cotton plaids. Mark: El Valeroso. Owner: Neuss, Hesslein & Co, New York.

83,932. Worsted goods in the piece. Mark: S. H. S. Owner: Samuel Hird & Sons, Passaic, N. J.

83,986. Clothing. Mark: Boston Maid. Owner: Textile Products Co., Boston, Mass.

84,269. Velvets and plushes. Mark: Dres-Tex. Owner: The Salt's Textile Mfg. Co., Bridgeport, Conn.

84,270. Velvets and plushes. Mark: Vel-Cord. Owner: The Salt's Textile Mfg. Co., Bridgeport, Conn.

84,301. Cotton piece goods. Mark: Seminary. Owner: Stix-Baer & Fuller Dry Goods Co., St. Louis, Mo.

47,826. Knit Goods. Mark: United Textile Co. Owner: Gurnsey B. Williams Co., Syracuse, N. Y.

67,422. Men's underclothing. Mark: Subway. Owner: Silverberg & Lince, Des Moines, Ia.

77,560. Shirts, jackets, etc. Mark: Mohawk. Owner: Mohawk Overall Co., Detroit, Mich.

82,651. Cotton piece goods. Mark Elgger. Owner: Wegelin & Schweizer, New York.

82,784. Clothing. Mark: Lightning Change. Owner: Joseph Goldberg, Philadelphia, Pa.

84,174. Finished cloth for binding books. Mark: Record Buckram. Owner: The Holliston Mills, Norwood, Mass.

84,649. Hosiery. Mark: Pathfinder. Owner: Durham Hosiery Mills, Durham, N. C.

84,800. Infants' Hose. Mark: Q—P. Owner: Hub Hosiery Mills, Boston, Mass.

78,224. Cotton piece goods. Mark: Tarantulle. Owner: Tootal, Broadhurst Lee Co., Manchester, Eng.

80,203. Woolen piece goods. Mark: Sea Side. Owner: Charles R. Hurd, New York.

84,153. Bath mats, washcloths, etc. Mark: Ward. Owner: Ward, Meehan Co., Philadelphia, Pa.

84,220. Mercerized and other cotton yarns. Mark: Kord-Net. Owner: Harding, Tilton Co., Boston, Mass.

84,324. Carpets and rugs. Mark: Bo-Zart. Owner: William M. Stevenson, Springfield, Mass.

84,341. Aprons. Mark: Dollarset aprons. Owner: Abraham Kaplon, Summit, N. J.

84,497. Combination under garment. Mark: Tripelope. Owner: D. E. Sicher & Co., New York.

83,484. Hosiery. Mark: Thelma. Owner: S. H. Kress & Co., New York.

83,488. Hosiery. Mark: Cleopatra. Owner: S. H. Kress & Co., New York.

80,216. Cotton duck, piece and dress goods. Mark: Selkirk. Owner: J. Spencer Turner Co., New York.

81,684. Hosiery. Mark: Safety First. Owner: John M. Given, Pittsburgh, Pa.

83,296. Ginghams. Mark: Red Rose of Lancaster. Owner: Lancaster Mills, Clinton, Mass.

83,557. Silks in the piece. Mark: Floriswah. Owner: Louis Roessel & Co., New York.

83,826. Hosiery. Mark: Blue Bell. Owner: Illinois Knitting Co., Mount Vernon, Ill.

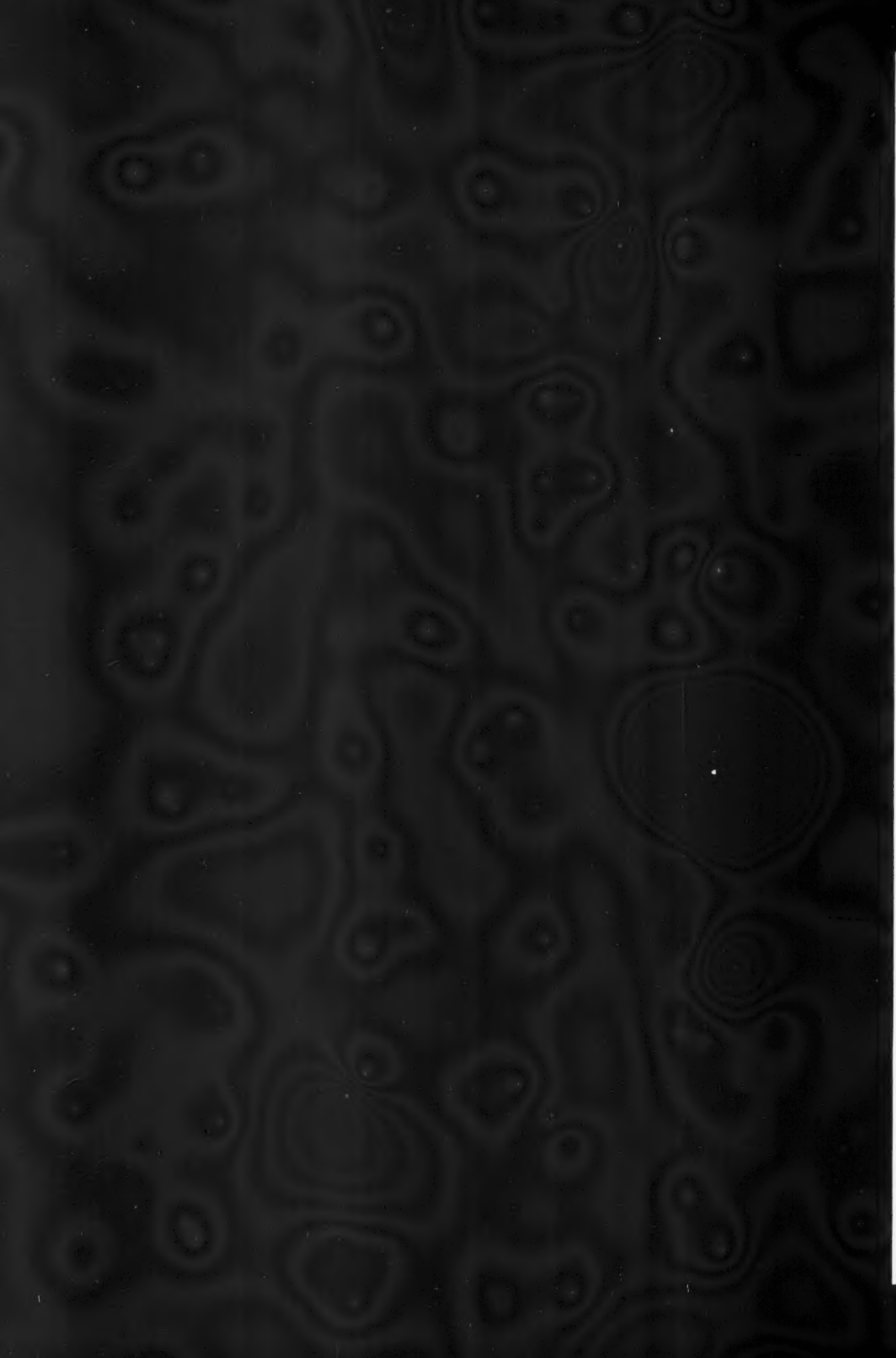
83,941. Child's undergarment. Mark: Alheneeds. Owner: Frederick H. Sprague Co., Orange, Mass.

74,987. Cotton poplin. Mark: Royal H & M Fabric. Owner: Halpren & Mittelman, Philadelphia, Pa.

81,152. Clothing. Mark: WV Bone. Owner: Gaylord A. Barcley, Newark, N. J.

81,618. Clothing. Mark: Viola. Owner: Carl Gutmann & Co., New York.

81,702. Clothing. Mark: Chic Maid. Owner: Abraham Abrahamson, Chicago, Ill.



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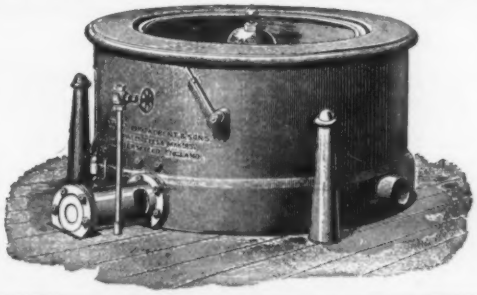

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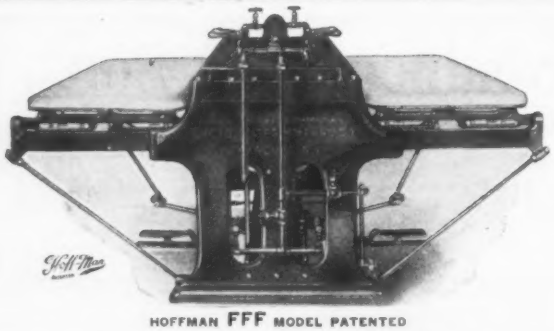

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This department is conducted for the benefit of our subscribers. The addresses of builders of mill machinery and dealers in mill supplies, whose names appear in the following classified index, may be found upon referring to their advertisements. The Alphabetical Index to advertisers follows this classified list. Buyers who are unable to find in the classification here given such machinery or supplies as they desire, are invited to communicate with the publishers, who can, in all probability, refer them to proper sources. Advertisers whose names do not appear under headings to which they are entitled will please notify the publishers.

Absorbent Cotton Wool Machinery.
Tatham, William, Ltd.

Air Moistening System.
——See Humidifying Apparatus.

Albone.
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Dyer, W. E. S.
Ferguson, John W.
Main, Charles T.
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Asbestos Products.
Johns-Manville Co., H. W.

Ash Handling Equipment.
Green Engineering Co.
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Asphalt Tanks.
Scaife, W. B., & Sons.

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Philadelphia Drying Machinery Co.
Philadelphia Textile Machinery Co.
Saco-Lowell Shops.
Sargent's, C. G., Sons.
Schofield, Wm., Co.
Smith & Furbush Mch. Co.
Tatham, William, Ltd.
Woonsocket Machine & Press Co.

Back Filling.
International Pulp Co.

Bale Presses.
Saco-Lowell Shops.

Baling Presses.
Boomer & Boschert Press Co.
Philadelphia Drying Mchy. Co.
Smith & Furbush Mch. Co.

Ballers.
Saco-Lowell Shops.

Ball Bearings.
S. K. F. Ball Bearing Co.

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Sternberg, Fred, & Co.

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Lane, W. T., & Bro.
Standard Fibre Co.

Beamers.
Crompton & Knowles Loom Works.

Bearings.
——See Ball Bearings, Oil-less Bearings and Roller Bearings.

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Bond, Charles, Co.
Gandy Belting Co.
Graton & Knight Mfg. Co.
Hood, R. H., Co.
Johns-Manville Co., H. W.
Schieren, Chas. A., Co.
Williams, I. B., & Sons.
——See also Mill Supplies.

Belting, Leather.
Graton & Knight Mfg. Co.
Schieren, Chas. A., Co.

Belting, Link.
Graton & Knight Mfg. Co.
Schieren, Chas. A., Co.

Belt Cement.
Graton & Knight Mfg. Co.
Schieren, Chas. A., Co.

Belt Dressing.
Graton & Knight Mfg. Co.
Schieren, Chas. A., Co.
Stephenson Mfg. Co.

Belt Lacing, Leather.
Graton & Knight Mfg. Co.
Schieren, Chas. A., Co.

Belt Tighteners.
Hunter, James, Machine Co.

Bindings.
——See Tapes and Braids.

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Butterworth, H. W., & Sons Co.
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Textile-Finishing Machinery Co.

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Electro Bleaching Gas Co.
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Autoforce Ventilating System.
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American Textile Specialty Mchy. Co.
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Leigh & Butler.
Tebbets, E. L., Spool Co.

Bobbin Winders.
Altemus, J. K.
Lever, Oswald, Co.
Universal Winding Co.

Boilers.
——See Steam Boilers.

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Fearson, J. T.
Standard Fibre Co.
Veneer Products Co.

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New England Butt Co.
Textile Machine Works.

Braids.
——See Tapes, Braids and Edgings.

Brass Hinges.
Root, C. J., Co.

Bridges.
Scaife, W. B., & Sons.

Brushers.
——See Napping Machines.

Brushes.
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Felton, S. A., & Son Co.
Parks & Woolson Machine Co.

Brushing Machines.
Buhlmann, A. W.
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Button Sewing Machines.
Union Button Sewing Co.

Calico Printers' Machinery and Supplies.
Birch Bros., Somerville Mach. Wks.
Buhlmann, A. W.
Butterworth, H. W., & Sons Co.
Schwartz, L. H. A., & Co.
Somerville Mach. Wks. (Albert Birch, prop.).
Taunton-New Bedford Copper Co.
Textile-Finishing Machinery Co.
——See also Dyeing, Drying, Bleaching, Machinery, etc.

Canvas Baskets.
Lane, W. T., & Bro.

Cap Spindles.
Am. Textile Specialty Mchy. Co.

Carbonizing Machinery.
Birch Bros., Somerville Mach. Wks.
Buhlmann, A. W.
Philadelphia Drying Machinery Co.
Philadelphia Textile Machinery Co.
Sargent's, C. G., Sons.
Schwartz, L. H. A., & Co.
Somerville Mach. Works (Albert Birch, prop.).
Textile-Finishing Machinery Co
Tolhurst Machine Works.

Card Clothing.
Ashworth Bros.
Atkinson, Haserick & Co.
Buhlmann, A. W.
Firth, William, Co.
H. & B. American Machine Co.
Leigh & Butler.
Riley, C. E., Company.
Schwartz, L. H. A., & Co.

Card Feeds.
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Card Grinding Machinery.
Atkinson, Haserick & Co.
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Dronsfield Bros.
Entwistle, T. C., Co.
Firth, William, Co.
Fraser, Douglas & Sons, Ltd.
Leigh & Butler.
Riley, C. E., Company.
Smith & Furbush Machine Co.

Card Leather.
Graton & Knight Mfg. Co.

Carding Machinery.
Fraser, Douglas & Sons, Ltd.
Saco-Lowell Shops.
Smith & Furbush Mch. Co.
Tatham, William, Ltd.

Card Stampers and Repeaters.
Hodgson, Walter W.

Carpet Machinery.
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Crompton & Knowles Loom Works.
Curtis & Marble Machine Co.
Parks & Woolson Machine Co.
Philadelphia Textile Machinery Co.
Smith & Furbush Machine Co.
Textile-Finishing Machinery Co.

Carrier Aprons.
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Castings.
Decatur Fndry, Furnace & Mch. Co.
Fairbairn, Lawson, Combe, Barbour, Ltd.
Hunter, James, Machine Co.
Lunkenheimer Co., The.
Royersford Foundry & Machine Co.
Schofield, Wm., Co.

Caustic Soda.
Wing & Evans.

Cement Pans.
Scaife, W. B., & Sons.

Centrifugal Filters.
Watson, Laidlow & Co., Ltd.
Wayte, W. J., Inc.

Centrifugal Machines.
Schaum & Uhlinger, Inc.
Watson, Laidlow & Co., Ltd.
Wayte, W. J., Inc.

Chain Belts.
Morse Chain Co.

Chains, Power Transmission.
Morse Chain Co. (Silent Driving).

Chemists.
Little, Arthur D., Inc.
Lunkenheimer Co., The.

Chenille Machinery.
Eppler, John, Machine Works.

Clocks.
Pettes & Randall Co.
Watchman's Clock & Supply Co.

Cloth Boards.
Chaffee Bros.
Pearson, J. T.
Richardson Brothers.
Textile-Finishing Machinery Co.

Cloth Cutting Machines.
Eastman Machine Co.
Firth, William, Co.

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Cloth Doubling Machinery.
Curtis & Marble Machine Co.
Parks & Woolson Machine Co.

Cloth Dryers.
——See Drying Machinery.
Oswego Machine Works.
Weinerth Knitting & Machine Co.

Cloth Expanders.
Birch Bros. Somerville Machine Wks. (Albert Birch, prop.).
Leyland, Thomas, & Co.
Somerville Mach. Wks. (Albert Birch, prop.).

Cloth Shrinking Machinery.
Reliance Machine Works.

Cloth Testers.
Perkins, B. F., & Son, Inc.
Scott, H. L., & Co.
Suter, Alfred.

Cloth Winders.
Firsching, J. A.
Ireland Machine & Foundry Co.
Parks & Woolson Machine Co.

Clutches.
Decatur Fndry, Furnace & Mch. Co.
Hunter, James, Machine Co.

Coal Analysis.
Little, A. D., Inc.

Collars (Shaft).
Royersford Foundry & Machine Co.

Comb Aprons.
Graton & Knight Mfg. Co.

Combs (Wool and Cotton).
Atkinson, Haserick & Co.
Crompton & Knowles Loom Works.
Entwistle, T. C., Co.
Firth, William, Co.
Hood, R. H., Company.
Leigh & Butler.
Riley, C. E., Company.

Commercial Vehicles.
Kissel Motor Car Co.
Pierce Arrow Motor Car Co.

Compressors (Air).
Allis-Chalmers Mfg. Co.
General Electric Co.

Condensers.
Allis-Chalmers Mfg. Co.
Buffalo Steam Pump Co.
Dodge, C. S.

Conditioning and Testing.
U. S. Conditioning & Testing Co.

Conditioning Machines.
Buhlman, A. W.
Manufacturers Machine Co.
Parks & Woolson Machine Co.

Cones (Paper).
Am. Textile Specialty Mchy. Co.
Pairpoint Corporation.

Conveying Systems.
Buffalo Forge Co.
Sturtevant, B. F., Co.

Conveyor Belting
Gandy Belting Co.

Conveyors, Gravity.
Otis Elevator Co.

Coolers (Air).
Power Specialty Co.

Cop Machinery.
Eppler, John, Machine Works.

Cop Spindles.
American Textile Specialty Co.

Cop Tubes.
Am. Textile Specialty Mchy. Co.
Pairpoint Corporation.
——See Paper Tubes.

Copper Expansion Joints.
Badger, E. B., & Sons Co.

Copper Print Rollers.
Taunton-New Bedford Copper Co.

Coppersmiths.
Badger, E. B., & Sons Co.
Butterworth, H. W., & Sons Co.
Textile-Finishing Machnery Co.

Copper Work for Dyers.
Badger, E. B., & Sons Co.
Butterworth, H. W., & Sons Co.
Textile-Finishing Machinery Co.

Copyrights, Etc.
Calmore & Co.

Corduroy and Velvet Cutting Machines.
Firth, William, Co.

Corrugated Iron and Steel.
Scaife, W. B., & Sons.

Cotton.
Riley, C. E., Company.
Schwartz, L. H. A., & Co.

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Ashworth Bros.
Atkinson, Haserick & Co.
Barber-Colman Co.
Buhlmann, A. W.
Butterworth, H. W., & Sons Co.
Cramer, Stuart W.
Crompton & Knowles Loom Works.
Curtis & Marble Machine Co.
Dixon Lubricating Saddle Co.
Draper Company.
Elliott & Hall.
H & B. American Machine Co.
Klauder-Weldon Dyeing Mch. Co.
Leigh & Butler.
Mason Machine Works.
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Philadelphia Drying Machinery Co.
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Saco-Lowell Shops.
Schwartz, L. H. A., & Co.
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Stafford Co., The.
Tatham, William, Ltd.
Textile-Finishing Machinery Co.
Textile Machinery Co.
Wildman Mfg. Co.
Woonsocket Mch. & Press Co.

Cotton Openers and Lappers.
Atkinson, Haserick & Co.
Firth, William, Co.
Hetherington, John & Sons, Ltd.
H. & B. American Machine Co.
Leigh & Butler.
Potter & Johnston Mch. Co.
Riley, C. E., Company.
Saco-Lowell Shops.

Cotton Softeners.
Bosson & Lane.
Harding & Fancourt, Inc.
Seydel Mfg. Co., The.
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Firth, William, Co.
Saco-Lowell Shops.
Smith & Furbush Mch. Co.
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Counting Machines.
Durant Manufacturing Co.
National Scale Co.
Root, C. J., & Co.

Couplings (Flexible-Insulated).
Bond Co., Charles.

Couplings (Shaft).
Royersford Foundry & Machine Co.

Crayons.
American Crayon Co.
Lowell Crayon Co.

Cutting Machines.
Eastman Machine Co.
Firsching, J. A.
Ireland Machine & Foundry Co.
Oswego Machine Works.
Perkins, B. F., & Son, Inc.
Weinerth Knitting & Machine Co.

Cylinder Oil (Superheated Steam).
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Decating Machinery.
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Schwartz, L. H. A., & Co.

Disinfectants.
Seydel Mfg. Co., The.

Dobbies.
Crompton & Knowles Loom Works.
Halton's, Thomas, Sons.
Stafford Co., The.

Drawing Rolls.
Hood, R. H., Company.
H. & B. American Machine Co.
Metallic Drawing Roll Co.

Drinking Fountains.
Johns-Manville Co., H. W.
Puro Sanitary Drinking Fountain Co.
Rundle-Spence Mfg. Co.

Drives, Silent Chain.
Morse Chain Co.

Drop Wires.
Connecticut Mill Supply Co.

Drying Boards.
Pearson, J. T.
Philadelphia Drying Mchy. Co.

Drying Machinery.
Bailey, Frank.
Birch, Albert, Somerville Mach. Wks.
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Buffalo Forge Co.
Buhlmann, A. W.
Butterworth, H. W., & Sons Co.
Consolidated Hospital Sup. & Laundry Machinery Co.
Decatur Fndry, Furnace & Mch. Co.
Hunter, Jas., Machine Co.
Kenyon, D. R., & Son.
Philadelphia Drying Machinery Co.
Philadelphia Textile Machinery Co.
Sargent's, C. G., Sons.
Schwartz, L. H. A., & Co.
Somerville Mach. Wks. (Albert Birch, prop.).
Sturtevant, B. F., Co.
Textile-Finishing Machinery Co.
Tolhurst Machine Works.

Dusters.
——See Wool and Waste Dusters.

Dust Collectors.
Buffalo Forge Co.
Buffalo Steam Pump Co.
Philadelphia Drying Machinery Co.
Sturtevant, B. F., Co.

Dyers Clogs.
Brown, Wm., Sons.

Dyers, Bleachers and Finishers.
Aberfoyle Mfg. Co.
Brophy's, T., Sons.
Davidson, John F.
Franklin Process Co.
Globe Dye Works Co.
Home Bleach & Dye Works.
Hopkinson Dyeing & Textile Wks.
National Silk Dyeing Co.
Peerless Co.
Utica Willowvale Bleaching Co.

Dyeing, Drying, Bleaching and Finishing Machinery.
American Laundry Machinery Co.
Autoforce Ventilating System.
Birch, Albert, Somerville Mach. Wks.
Birch Bros., Somerville Mach. Wks.
Buffalo Forge Co.
Buffalo Steam Pump Co.
Buhlmann, A. W.
Butterworth, H. W., & Sons Co.
Consolidated Hospital Sup. & Laundry Machinery Co.
Curtis & Marble Machine Co.
Franklin Process Co.
Giles, J. H., Dyeing Machine Co.
Heathcote, John, & Son.
Klipstein, A., & Co.
Hunt, Rodney, Mach. Co.
Hunter, James, Machine Co.
Hussong Dyeing Machine Co.
Kenyon, D. R., & Son.
Klauder-Weldon Dyeing Mch. Co.
Leigh & Butler.
Leyland, Thos., & Co.
Manufacturers Machine Co.
National Laundry Machinery Co.
Parks & Woolson Machine Co.
Perkins, B. F., & Son, Inc.
Philadelphia Drying Machinery Co.
Philadelphia Textile Machinery Co.
Reliance Machine Works.
Schwartz, L. H. A., & Co.
Smith, Drum & Co.
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Sturtevant, B. F., Co. (Drying).
Suter, Alfred.
Textile Finishing Machinery Co.
Tolhurst Machine Works.
Uniform Dyeing Machine Co.
U. S. Hoffman Co.

Dye House Cans.
Diamond State Fibre Co.
Hill, James, Mfg. Co.

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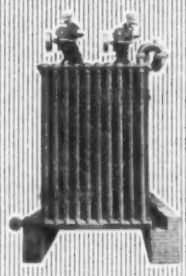
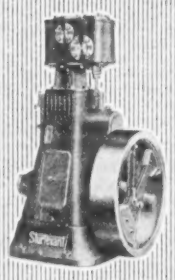
Sturtevant

Fans



Economizers



Engines

The Growth of a Great Industry

BACK in the early sixties our business in fans and blowers was firmly established but no suitable drivers were available—no engine of the period came up to requirements. Accordingly there was developed a complete line of steam engines—sturdy, well-designed and perfectly lubricated. These engines found early application in naval service where requirements are exceedingly severe. The fact that they proved so successful is a sufficient guarantee of their excellence. Later, motors and turbines were developed as high speed fans came into general use.

We thus have a complete line of fans and prime movers and can deal efficiently with all air-handling problems—no matter what the conditions of speed or pressure.

The designs of all our prime movers—engines, turbines and motors—have been worked out with special reference to their application to fans and blowers. For such service they are unquestionably superior.

The addition of fuel economizers to our line of power apparatus enables us to render complete and efficient service in power-house economy.

Bulletins are published on all our apparatus. Copies sent on request.

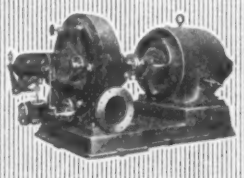
B. F. Sturtevant Company

Hyde Park, - - Boston, Mass.

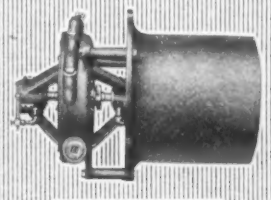
and all principal cities of the world

Selling Agents, Sanford Riley Stoker Co., Ltd.
THE RILEY STOKER.

Motors



Turbo Generator



Turbo-Undergrate Blower

Dye House Trucks.
Bailey, Frank.
Diamond State Fibre Co.
New England Tank & Tower Co.

Dye Kettles.
New England Tank & Tower Co.
Stearns, A. T., Lumber Co.

Dye Sticks.
Bailey, Frank.
Klauder-Weldon Dyeing Mch. Co.
New England Tank & Tower Co.

Dye Tubs.
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Dyestuffs and Chemicals.
American Dyewood Co.
Atteaux, F. E., & Co.
Badische Co.
Bayer Co., The, Inc.
Berlin Aniline Works.
Bischoff & Co.
Bosson & Lane.
Cassella Color Co.
Electro Bleaching Gas Co.
Farbwerke-Hoechst Co.
Ford, J. B., Co.
Geisenheimer & Co.
Harding & Fancourt, Inc.
Holliday, Read & Sons.
Innis Speiden & Co.
Johnson, Chas. A., & Co.
Kalle Color & Chemical Co., Inc.
Klipstein, A., & Co.
Leyland, Thos., & Co.
National Aniline & Chemical Co.
Roessler & Hasslacher Chemical Co.
Seydel Mfg. Co.
Sizing Specialties Co.
Standard Aniline Products, Inc.
Stein, Hirsh & Co.
Sykes, Walter F., & Co.
Thayer, Ed. M., & Co.
Wing & Evans, Inc.
Wolf, Jacques & Co.
Worden Chemical Co.

Dynamos.
——See Electric Lighting.

Edgings.
——See Tapes, Braids and Edgings.

Electrical Construction.
Allis-Chalmers Mfg. Co.
Crocker-Wheeler Co.
General Electric Co.
Sturtevant, B. F., Co.
Westinghouse Electric & Mfg. Co.

Electric Heating Devices.
Crocker-Wheeler Co.
General Electric Co.

Electrical Supplies.
General Electric Co.
Johns-Manville Co., H. W.

Electric Driven Pumps.
Allis-Chalmers Mfg. Co.
Buffalo Steam Pump Co.
General Electric Co.

Electric Fans.
Allis-Chalmers Mfg. Co.
Buffalo Forge Co.
Buffalo Steam Pump Co.
Crocker-Wheeler Co.
General Electric Co.
Philadelphia Drying Machinery Co.
Philadelphia Textile Machinery Co.
Sturtevant, B. F., Co.
Westinghouse Electric & Mfg. Co.

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Crocker-Wheeler Co.
General Electric Co.

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Allis-Chalmers Mfg. Co.
Cooper Hewitt Electric Co.
Crocker-Wheeler Co.
General Electric Co.
Johns-Manville Co., H. W.
Sturtevant, B. F., Co.
Westinghouse Electric & Mfg. Co.

Electric Motors.
Allis-Chalmers Mfg. Co.
Crocker-Wheeler Co.
General Electric Co.
Sturtevant, B. F., Co.
Westinghouse Electric & Mfg. Co.

Electrolyzer.
National Laundry Machinery Co.

Elevators.
Craig Ridgway & Son Co.
Decatur Fndry, Furnace & Mch. Co.
Economy Engineering Co.
N. Y. Revolving Portable Elevator Co.
Otis Elevator Co.
Salem Elevator Works.

Employes' Time Recorders.
Pettes & Randall Co.

Engineers (Ventilating).
Myrick, J. W. H.
Sturtevant, B. F., Co.

Engines (Steam, Oil, Gas).
Allis-Chalmers Mfg. Co.
Buffalo Forge Co.
Fairbairn, Lawson, Combe, Barbour, Ltd.
International Gas Engine Co.
International Steam Pump Co.
Snow Steam Pump Plant.
Sturtevant, B. F., Co.
Textile Finishing Machinery Co.

Exhaust Heads.
Power Specialty Co.
Sturtevant, B. F., Co.

Extractors.
American Laundry Machinery Co.
Atkinson, Haserick & Co.
Broadbent, Thomas, & Sons.
Riley, C. E., Co.
Schaum & Uhlinger, Inc.
Schwartz, L. H. A., & Co.
Tolhurst Machine Works.
Watson, Laidlow & Co., Ltd.
Wayte, W. J., Inc.

Fans—Exhaust and Ventilating.
——See Ventilating Apparatus.

Feed Water Heaters.
Blake & Knowles Steam Pump Works.
Scaife, W. B., & Sons.

Feed Water Pumps.
Buffalo Steam Pump Co.
Goulds Mfg. Co.

Feed Water Purifiers.
American Water Softener Co.
International Filter Co.
Scaife, W. B., & Sons.

Feeds.
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Felt Rotary Washers.
Hunt, Rodney, Machine Co.

Felting Machinery.
Hunt, Rodney, Machine Co.
Smith & Furbush Machine Co.

Fender Boards.
Case Brothers.

Fibre Boxes.
Diamond State Fibre Co.
Standard Fibre Co.

Fibre Trucks.
Diamond State Fibre Co.
Standard Fibre Co.

Filters.
American Water Softener Co.
Hungerford & Terry.
International Filter Co.
Norwood Engineering Co.
Permutit Co.
Scaife, W. B., & Sons.

Finishing Compounds.
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Finishing Machinery.
——See Dyeing, Drying, Bleaching and Finishing.

Fire Alarms.
Pettes & Randall.

Fire Brick.
Borgner, Cyrus, Co.
Johns-Manville Co., H. W.

Fire Extinguishers.
Badger, E. B., & Sons Co.
Johns-Manville Co., H. W.

Fire Hose.
Eureka Fire Hose Co.

Fire Hydrants.
Norwood Engineering Co.

Fire Insurance.
Home Insurance Co.

Fire Proof Doors and Windows.
Badger, E. B., & Sons Co.

Flexible Metal Hose.
Johns-Manville Co., H. W.

Flow Meters, Steam.
General Electric Co.

Fluted Rolls.
Firth, William, Co.
Hood, R. H., Company.
H. & B. American Machine Co.
Leigh & Butler.
Metallic Drawing Roll Co.
Riley, C. E., Company.

Flyers.
Bodden, Wm., & Son, Ltd.
Firth, William, Co.
H. & B. American Machine Co.
Leigh & Butler.
Textile Machinery Co.

Forges.
Buffalo Forge Co.
Sturtevant, B. F., Co.

Friction Clutches.
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Friction Cones.
Evans Friction Cone Co.

Fuel Economizers.
Sturtevant, B. F., Co.

Fulling Mills for Woolen Goods.
American Laundry Machinery Co.
Hunt, Rodney, Mach. Co.
Hunter, James, Mach. Co.
Kenyon, D. R., & Son.

Garnetts.
Hunter, James, Machine Co.
Leigh & Butler.
Smith & Furbush Machine Co.

Garnetted Stock.
Graves, Frank B.

Gas Blowers and Exhausters.
Sturtevant, B. F., Co.

Gas Engines.
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Gas Systems.
Kemp Mfg. Co.

Gaskets (Superheated Steam).
Johns-Manville Co., H. W.
Power Specialty Co.

Gauges.
Lunkenheimer Co., The.

Gears.
Diamond State Fibre Co.
General Electric Co.
New Process Gear Corporation.

Gear Cutting Machine.
Whiton, The D. E., Co.

Gearing, Silent Flexible.
Morse Chain Co.

Generating Sets.
Allis-Chalmers Mfg. Co.
General Electric Co.
Sturtevant, B. F., Co.

Geyser Water Heater.
Sargent's Sons, C. G., Corp.

Greases.
Borne, Scrymser Co.
N. Y. & N. J. Lubricant Co.
Royersford Foundry & Machine Co.

Grinding and Polishing Machines.
Royersford Foundry & Machine Co.

Gun Cotton Machinery.
Tatham, William, Ltd.

Hangers.
——See Power Transmission Machinery.

Harness Twine.
Moore, C., & Co.

Harness and Frames.
Garland Mfg. Co.
Steel Heddle Mfg. Co.

Heating.
——See Ventilating Apparatus.

Heddles.
American Supply Co.
Atkinson, Haserick & Co.
Firth, William, Co.
Lavigne & Suter.
Steel Heddle Mfg. Co.

Hoists.
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Hoisting Apparatus.
Economy Engineering Co.
Hunt, Rodney, Machine Co.
N. Y. Revolving Portable Elevator Co.

Hose.
Johns-Manville Co., H. W.

Hose, Pneumatic.
Johns-Manville Co., H. W.
Parks, G. M., Co.

Hosiery Boards.
Pearson, J. T.
Philadelphia Drying Machinery Co.

Hosiery Labels.
Kaumagraph Co.

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National Aniline & Chemical Co.

100 William Street, New York

Manufacturers of

Aniline Colors and Coal Tar Products

Importers of

Dyestuffs, Chemicals Gums, Etc.

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WORKS:

Schoellkopf Aniline & Chemical Works, Inc., Buffalo, N. Y.

What is it worth to YOU?

Our Half Century of experience in making Raw Hide Loom Pickers

Raw hide is very difficult to work and only those who have had great experience with this material can handle it successfully. Our nearly 50 years' experience in making raw hide loom pickers enables us to not only know the kind of hides which make the best pickers but also to know how to work the hide to produce the best results. In hide quality and in workmanship our pickers are as good as it is possible to produce.

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SACO, MAINE

Humidifying Apparatus.
American Moistening Co.
Carrier Air Conditioning Co. of America.
Cramer, Stuart W.
Parks, G. M.

Humidity Controller.
American Moistening Co.
Carrier Air Conditioning Co. of America.
Cramer, Stuart W.

Hydraulic Rams.
Power Specialty Co.

Hydro Extractors.
——See Extractors.

Insulating and Braiding Silks.
Sauquoit Silk Mfg. Co.

Insurance (Casualty, Fire and for Loss of Profits).
Home Insurance Co.
——See Liability Insurance.

Jacquards.
Crompton & Knowles Loom Works.
Halton's, Thomas, Sons.

Jacquard Cards.
Case Bros., Inc.

Knit Goods Dryers.
——See Drying Machinery.

Knit Goods, Edgings, Trimmings, Etc.
Chapin, George W.
Cheney Bros.
Friedberger-Aaron Mfg. Co.
Jenkins, E. Wheeler.
Krout & Fite Mfg. Co.
Weimar Bros.

Knit Goods, Finishing Machines, Crochet, Etc.
American Laundry Machinery Co.
Hunt, Rodney, Machine Co.
Merrow Machine Co., The.
Nye & Tredick Co.
Scott & Williams.
Spindler, E. O.
Union Special Machine Co.

Knitting Machine Cylinders.
Paxton & O'Neill.
Stafford & Holt.

Knitting Machinery.
Acme Knitting Machine & Needle Co.
Ainslie Knitting Machine Co.
Boss Knitting Machine Co.
Brinton, H., & Co.
Claes & Flentje.
Cooper, Charles.
Crane Mfg. Co.
Domestic Machinery Works.
Eppler, John, Machine Works.
Gormly, Robert.
Hemphill Mfg. Co.
Jenckes Knitting Machine Co.
Lamb Knitting Machine Co.
Leighton Machine Co.
Nye & Tredick Co.
Paxton & O'Neill.
Scott & Williams, Inc.
Spindler, E. O.
Stafford & Holt.
Standard Machine Co.
Textile Machine Works.
Tompkins Bros. Co.
Walther, Otto.
Wildman Mfg. Co.

Knitting Machinery (Full Fashioned).
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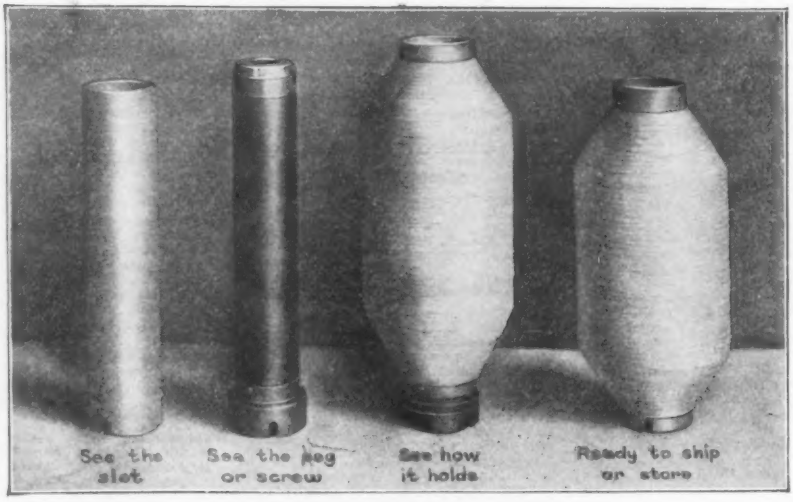

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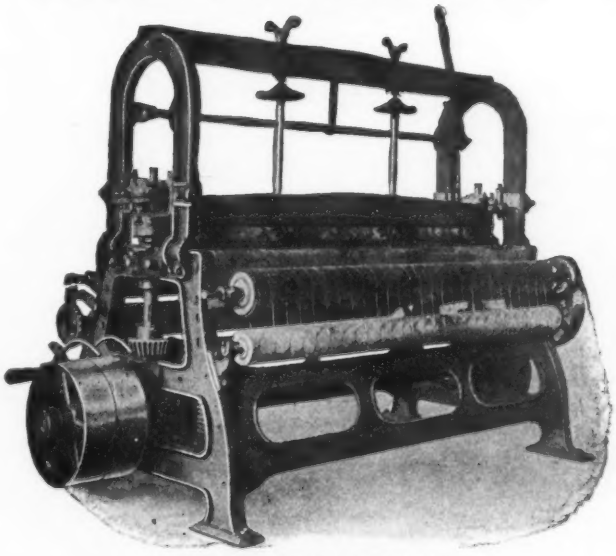

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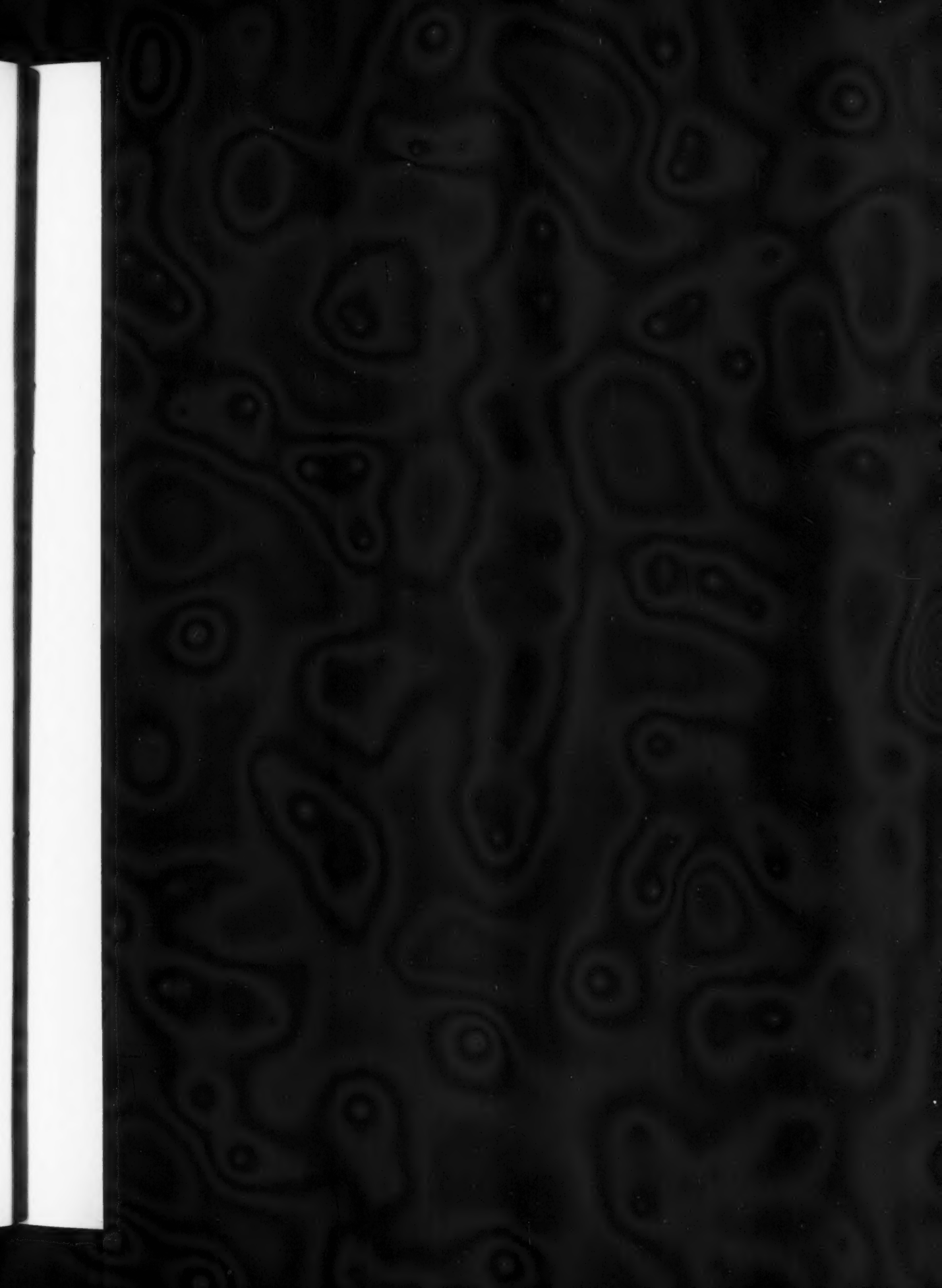

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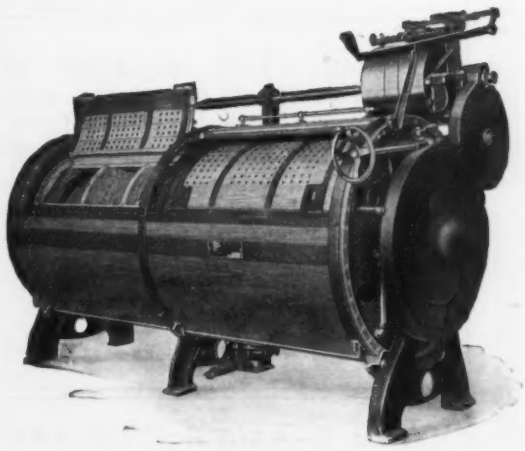

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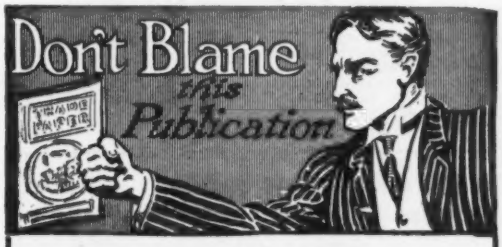

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Deals particularly with a description of the machinery and processes involved in the cleaning, opening, carding and spinning of cotton waste, treating the subject comprehensively and in detail.

The processes and machinery required for the production of condenser cotton waste yarns, are given special attention.

At the present time, no one can afford to neglect the question of waste, whether it be with regard to the reduction of its amount, or its profitable utilization.

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Money-Saving, Money-Making Opportunities

This is a special department for those who wish to buy or sell second-hand machinery, mills or mill sites, patents, etc., and for such advertisements as "Help" or "Situations Wanted." A special low rate is charged, viz., $1.00 for one-half inch, single column; $2 00 for one inch, single column, and in the same proportion for larger space. By measuring these advertisements and counting the words you will see what space is needed for your announcement. Remittance should accompany the order. No extra charge for forwarding replies sent in care of the Textile World Record. No advertisement accepted for less than $1.00.

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WANTED Position as foreman, or as Knitter and Fixer in small ladies knit underwear mill. Can produce from one to two more shirts from each knitting machine every day than has ever been done before according to yarn used. Would like to get connected with a manufacturer who owns his mill himself with a view of becoming a partner later on. Good sewing machine fixer. 35 years old. Married. Good references. Address "Knitter and Fixer," care Textile World Record, Boston, Mass

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Business properties, all sizes, all parts of United States. We handle exclusively the above line from an engineering and manufacturing standpoint. Indorsed by Banks and Railroads. Will build to your specifications and lease or sell on terms to suit. Appraisals and special reports on labor, shipping and location of business; also of buildings especially adapted for your uses.

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Factory Specialist and Engineer,
Suite 516 Stock Exchange Bldg., Philadelphia, Pa.

WANTED SUPERINTENDENT

Capable of energetic, efficient, up to date management of mill making bundled wool socks and wool underwear. Mail record, reference, age and expectations confidentially to

Charles Rasque,
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Interest in a newly patented Wind Loom for sale. Will weave plain, fancy or Terry towels, etc, giving new styles and effects. It saves twenty per cent. on production cost. If you want to help put this in operation, address: The Wind Loom Co., P. O. Box 1456, Paterson, N. J.

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For a Linen and Cotton Manufacturing Company owning two large Mills in Canada, and controlling 90% of the Linen goods manufactured in Canada, making all grades of Linens, from the cheapest crashes to high-class all-linen damask table linens.

It will be necessary for the party who takes the position to make a reasonable investment of not less than $10,000, so that his personal interests will be centered with the business.

An opportunity for the closest investigation will be given to a bona fide applicant

Address, "D-7-15," Textile World Record, Boston, Mass.

HARDING & FANCOURT, Inc.
Kensington Soap Works
Soaps of Quality, Turkey Red Oil, Tuscan Softener
Soluble Oils and Olive Oil
516-18 So. Delaware Ave. PHILADELPHIA

Position Wanted as Supt.

Assist. Supt. or Designer in Woolen, Worsted, or Cotton mill. Have had 18 years experience on fancy cottons, cotton duck, men's wear, woolens and dress goods, fine worsteds, etc. Had full charge of mill and bought all raw stock. 34 years old, married, best of references. Prefer New England States. Address "C-7-15" Textile World Record, Boston, Mass.

High Pick Corkscrews

Advertisers would like to connect with a mill that can make up these fabrics (90 to 130 picks) in worsted, or worsted and cotton.

We are in position to place substantial orders at once and are prepared to purchase for cash or to finance the purchase of yarns.

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Knit Wool Glove and Hockey Cap Machinery

35 Lamb Finger Machines, 5 Lamb Rack Plate Machines, 3 Crane Auto Cap Machines, 1 Payne Winder—24 Spindle, 325 Spools, 1 Merrow Crochet, 1 Sewing Machine, etc. All in first-class condition. Can be bought at very low figure. Machinery located at Kinderhook, N. Y. (Van Buren Knitting Co.) For information address

LEO. L. WERTHEIMER, 100 Morningside Drive, New York City

Pile Fabric Mill Wanted

Successful sales manager and styler desires to buy an interest in a progressive mill manufacturing novelty corduroys, velours, etc., for the women's garment trade, and where his capital, experience and energy can be profitably used. Address "B-7-15," Textile World Record, Boston.

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As we have so often said these "Wants, For Sale" pages of the Textile World Record seem to be the logical place for the advertising of second-hand machinery, because this publication carries more advertising of machinery than any other textile periodical.

The Sauquoit Silk Mfg. Co., of Philadelphia ran a small advertisement advertising Camless Coners in the Textile World Record and when we wrote them regarding the continuance of the advertisement they replied as follows:

January 29th, 1915
Lord & Nagle Co.

Dear Sirs:—Your favor of the 28th inst. received and would ask you to discontinue the advertisement regarding Camless Coners for the time being. We have already sold two of these, with a prospect of selling the other three. However, should this fall through we will re-advertise in the near future.

Congratulating you on the results we obtained from this advertisement, we remain,

Yours very truly,
Sauquoit Silk Mfg. Co.

When you have any second-hand machinery, equipment or supplies not in use do not store it away—for then it represents just so much idle capital on which you are losing interest. Turn the machinery into cash.

An advertisement in the Textile World Record will, in all probability, locate a buyer for you.

If you want more information on this point ask for "Who Are the Real Buyers."

Address "Want Ad" Department.

Textile World Record
144 Congress St., Boston, Mass.

MILL ENDS AND REMNANTS WANTED

We are in the market for various kinds of cloth remnants such as Flannels, Cheese Cloths, Domestics, etc., and wish to get in touch with mills direct who can supply same.

I. L. SCHEINMAN & CO.
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Selling Opportunity

AN old established dress goods house seeks to represent a mill of good reputation. Have full organization for selling Jobbers, Retailers, Garment makers and Book houses. Deal in medium and better grade materials. Address "A-7-15 DRESS GOODS," 120 Liberty Street, New York.

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Woolen and Worsted

By Roberts Beaumont

640 pages 500 illustrations
40 plates

The manufacture of woolen, worsted and union yarns and fabrics is covered in one large volume. Beginning with the raw materials there are chapters on Wool Sorting; Scouring and Blending; Carding, Spinning and Twisting; Worsted Yarn Construction; Fancy Twist Threads; Fabric Structure; Weaves; Warp Preparation; Weaving; Weave Combination; Drafting; Pattern Design; Color Applied to Weaves; Compound Fabrics; Fabric Analysis and Calculations; Finishing of Fabrics.

Price $12, express paid

Lord & Nagle Company

Publishers of the Textile World Record

144 Congress St. Boston, Mass.

Situations Wanted

Manufacturers who are in need of Superintendents or overseers for any department of mill work may learn of suitable men upon application by mail or telephone to C. T. DONLEVY, care Textile World Record, 144 Congress Street, Boston, who will give prompt attention to their requirements without charge.

Overseer of Carding, spinning or both in woolen mill; is familiar with all makes of machinery; 32 years of age, married; will not go South or to Canada; good reference.
6480, Textile World Record, Boston, Mass.

Overseer of circular spring needle knitting; has worked on cotton and woolen nets, fleece linings, etc.; familiar with all styles of goods made on these machines; also Tompkins, Campbell & Clute, American twist drill, Gormley and Wildman machines; 26 years of age; will not go South; good reference.
6481, Textile World Record, Boston, Mass.

Master Mechanic in cotton mill; is familiar with all kinds of cotton, silk, dyeing and thread machinery; 39 years of age, married; would like to locate in Rhode Island; good reference.
6482, Textile World Record, Boston, Mass.

Overseer of Weaving in cotton mill; has worked on plains, twills, sateens, heavy contils, fancies of all kinds, lenos, lappetts, seersucker cloth, pillow tubing, etc.; familiar with Lewiston, Mason, Crompton & Knowles, fancy, Draper, in fact all kinds of looms; 30 years of age, married; will not go West, South or to Canada; good reference.
6483, Textile World Record, Boston, Mass.

Overseer of Twisting, warping, spooling, winding, quilling and beaming in cotton mill; has worked on tire fabrics; familiar with Howard & Bullough, Draper, Fales & Jenks and Lowell machines; 36 years of age, married; will not go to Pa., West, South or to Canada; good reference.
6484, Textile World Record, Boston, Mass.

Overseer of Dyeing; has worked on worsted and woolen piece dyes, fancy goods, mackinaws cotton worsteds, shoddy and cotton mixes, cassimeres, coverts, etc.; familiar with Klauder-Weldon and Delahunty dyeing machines; 40 years of age, married; good reference.
6485, Textile World Record, Boston, Mass.

Overseer of Carding, second-hand or boss comber in cotton mill; has worked on all classes of fine combed goods; familiar with Whitin, Woonsocket, Saco, Lowell, and Pettee machines; 28 years of age; good reference.
6486, Textile World Record, Boston, Mass.

Second Hand in shoddy card room; has worked on all grades of shoddy; familiar with Lombard, James Smith and other cards; 28 years of age, married; good reference.
6487, Textile World Record, Boston, Mass.

Overseer of Finishing in woolen mill; has worked on all kinds of woolens and worsteds; familiar with all kinds of finishing machinery; 46 years of age, married; will not go South or to Canada; good reference.
6488, Textile World Record, Boston, Mass.

Boss Spinner in woolen mill; has worked on all classes of goods; familiar with Davis and Furber mules; 30 years of age, married; will not go to Pa., West, South or to Canada; good reference.
6489, Textile World Record, Boston, Mass.

Overseer of Woolen Spinning; has worked on mostly all classes of goods; familiar with Davis & Furber, Johnson & Bassett, in fact all makes of spinning machinery; 39 years of age, married; good reference.
6490, Textile World Record, Boston, Mass.

Overseer of Weaving or folding; has worked on silk, cotton and woolen mixed goods; familiar with Elliott and Hall yarding and doubling machines, also Crompton and Knowles looms; 31 years of age, married; will not go to Mass., R. I., Conn., or Canada; good reference.
6491, Textile World Record, Boston, Mass.

Overseer of Dyeing in cotton mill; has worked on all kinds of fancy and plain goods; familiar with all makes of machinery; 25 years of age; good reference.
6492, Textile World Record, Boston, Mass.

Superintendent of cotton mill or overseer of spinning; has worked on hosiery yarn; familiar with Woonsocket Machine & Press Co., Mason, Saco and Pettee, Curtis, Whitin and Kitson machines; 45 years of age, married; will not go South; good reference.
6493, Textile World Record, Boston, Mass.

Overseer or second hand of bleaching on cotton piece goods; has worked on sateens, crash, twills, toweling, tickings, voils, etc.; familiar with kiers, washers, mercerizing tenter and crepe machines; 22 years of age, married; will not go to N. H., West, South or to Canada; good reference.
6494, Textile World Record, Boston, Mass.

Boss Finisher in woolen mill; has worked on woolens, worsteds, cottons, unions, dress goods, men's wear and army goods; familiar with all standard makes of machinery; 35 years of age, married; will not go West, South or to Canada; good reference.
6495, Textile World Record, Boston, Mass.

Overseer of Finishing in woolen mill; has worked on all classes of face finish goods, meltons and cassimeres; familiar with all makes of machinery; 32 years of age, married; will not go to Pa., N. J., West, South or to Canada; good reference.
6496, Textile World Record, Boston, Mass.

Overseer of Dressing, beaming, chain quilling, skein winding, slashing and warping in cotton mill; has worked on denims, awnings, dress goods, ginghams, flannels, sheetings, drills, blankets, sateens and toweling; familiar with slashers, warpers, chain quillers, skein winders, etc.; 44 years of age, married; good reference.
6497, Textile World Record, Boston, Mass.

Overseer of Finishing in woolen mill; has worked on all kinds of goods, both woolens and worsteds, also women's wear; familiar with all kinds of machinery; 50 years of age, married; will not go to N. J. or Canada; good reference.
6381, Textile World Record, Boston, Mass.

Assistant Superintendent or overseer; has worked on all classes of wool and mohair, white and colored; familiar with open and cone drawing; ring, flyer and cap spinning; twisting and a good knowledge of all combing; 31 years of age, married; good reference.
6382, Textile World Record, Boston, Mass.

Overseer of Woolen Carding; has worked on satinets and woolens of all kinds; familiar with Davis & Furber, Cleveland, Furbush, Lombard and condensers; 50 years of age, married; good reference.
6383, Textile World Record, Boston, Mass.

Chemist or assistant superintendent of cotton piece goods finishing plant; has worked mostly on cotton piece goods; 50 years of age, married; good reference.
6384, Textile World Record, Boston, Mass.

Boss Finisher in woolen mill; has worked on all classes of woolens, worsteds and cotton worsteds; familiar with most all makes of machinery; will not go West, South or to Canada; good reference.
6385, Textile World Record, Boston, Mass.

Overseer of Weaving in cotton mill; has worked on plain goods, twills and sateens, from 3s to 110s; familiar with Northrop, Colvin, Whitin and Crompton & Knowles looms; 39 years of age, married; will go to Mass., R. I. and Conn.; good reference.
6329, Textile World Record, Boston, Mass.

Overseer of Carding in woolen mill; has worked on all kinds of goods; familiar with all makes of machinery; 40 years of age, married; will not go to Canada; good reference.
6330, Textile World Record, Boston, Mass.

Chief Engineer or master mechanic; is familiar with all kinds of machinery and engines; holds first class Massachusetts license; 28 years of age, married; will not go to Canada; good reference.
6242, Textile World Record, Boston, Mass.

Master Mechanic; would accept any good mechanical or electrical position; has worked on cotton and velvet machinery; engines; pumps; electrical equipment; power machinery; general repairs in different repair shops; 30 years of age, married; will not go to Pa., N. J., West, South or to Canada; good reference.
6375, Textile World Record, Boston, Mass.

Assistant Superintendent or assistant designer in woolen mill; has worked on both woolen and worsted fabrics of all kinds; familiar with English system worsted spinning machinery including carding, scouring, drawing and combing; Davis & Furber cards and mules; Crompton, Knowles, Draper, Stafford, Knowles roller and Crompton roller looms; 22 years of age; good reference.
6379, Textile World Record, Boston, Mass.

Overseer of Worsted Drawing or spinning; has worked on merinos, crossbreds and long luster wools, alpaca, mohair and mixtures, anywhere up to 60s spinning counts, also knitting yarns; familiar with all makes of drawing, spinning and twisting machinery; 23 years of age, married; good reference.
6380, Textile World Record, Boston, Mass.

Master Mechanic or would consider first class position as engineer; has worked on cotton, woolen and print yard machinery; also understands D. C. and A. C. motors and generators; has a first class Massachusetts engineer's license; 30 years of age, married; will not go to Pa., N. Y., N. J., West, South or to Canada; good reference.
6377, Textile World Record, Boston, Mass.

Overseer of Weaving in woolen mill; has worked on all classes of men's wear, fancy worsteds, piece dyes, all grades of woolens, dress goods, etc.; familiar with Knowles, cam, Crompton & Thayer looms; 41 years of age, married; will not go to Canada; good reference.
6331, Textile World Record, Boston, Mass.

Overseer of Weaving in woolen mill; has worked on woolen and worsted men's wear, broad cloths, kerseys and unions; familiar with Crompton & Knowles, Davis & Furber and Gilbert machines; 44 years of age; prefers New England; good reference.
6332, Textile World Record, Boston, Mass.

Overseer of Cotton Carding; has worked on prints and sheetings; familiar with most makes of English and American machines; 50 years of age, married; good reference.
6333, Textile World Record, Boston, Mass.

Machinist; has had experience in this line; 22 years of age; will not go West, South or to Canada; good reference.
6334, Textile World Record, Boston, Mass.

Overseer of Weaving in woolen mill or designer; has worked on all kinds of fancy woolens, men's wear and dress goods; also light weight worsted dress goods; familiar with Knowles looms; 48 years of age, married; prefers Mass.; will go anywhere for suitable position; good reference.
6335, Textile World Record, Boston, Mass.

Fixer on Hosiery Machines; would take charge of knitting room; has worked on all kinds of yarns, ribbed goods, hose and half hose; familiar with Banner, Jenckes, George D. Mayo, Model A., Standard, Burson, Creelman, also different makes of ribbers; 30 years of age, married; good reference.
6336, Textile World Record, Boston, Mass.

Machinist on Circular and flat machines; has worked on sweaters; familiar with Stafford & Holt, Leighton and other circular machines; Grosser, C. & F., Lamb and flat machines; 33 years of age; married; will not go to Vt., West, South or to Canada; good reference.
6337, Textile World Record, Boston, Mass.

Knitting Machine Fixer, or second hand; has worked on underwear; all kinds of yarns and garments; familiar with Wildman, Scott & Williams, Stafford & Holt, Snyder & Fisher machines; 30 years of age, married; good reference.
6338, Textile World Record, Boston, Mass.

Overseer of Finishing in knitting mill; would consider position in charge of sewing machines; has worked on cotton, wool and silk knit goods; familiar with Singer, Merrow, Union Special, Metropolitan, Wilcox & Gibbs, Union Button and other sewing machines; 32 years of age, married; good reference.
6449, Textile World Record, Boston, Mass.

Master Mechanic; has had a wide experience; 50 years of age, married; good reference.
6450, Textile World Record, Boston, Mass.

Overseer of Weaving in cotton mill; has worked on all kinds of dobby work, lenos, jacquards, box work; in fact is well up on all kinds of fancy work on cotton, worsted, silk, etc.; familiar with Crompton, Knowles, Draper, Lewiston, Lowell, Whitin and Mason looms; also all kinds of dobbies and jacquards; 37 years of age, married; will not go to Pa., N. Y., N. J. or West; good reference.
6451, Textile World Record, Boston, Mass.

Designer and Assistant Superintendent in cotton mill; has worked on ginghams, novelty dress goods, etc., also cotton yarn spinning; familiar with Fairmount, Crompton & Knowles looms; Whitin frames; warp dyeing, long chain and quilling machinery; 28 years of age, married; will not go West or to Canada; good reference.
6452, Textile World Record, Boston, Mass.

Assistant Superintendent in cotton mill; has worked on cotton duck, bag cloth, sheetings, grain bags, shirtings, dress goods, awnings, tickings, lenos, curtains, etc.; familiar with Draper, Whitin, Saco, Lowell, Mason, Fales & Jenks, Entwistle, Stafford, Woonsocket, Crompton & Knowles, Mason, Universal winding, Potter & Johnson, etc.; 27 years of age; will not go West, South or to Canada; good reference.
6453, Textile World Record, Boston, Mass.

Overseer of Finishing in knitting mill or would consider position as overseer of cutting in cotton mill making garments; has worked on cotton and knit goods; will not go to Pa., N. J., West, South or Canada; 30 years of age; good reference.
6454, Textile World Record, Boston, Mass.

Overseer of Dressing in woolen mill, or second-hand; has worked on medium and fine woolen and cotton mixes and worsteds; fancies in both classes; familiar with Davis & Furber and Cleveland dressing frames; 43 years of age, married; will not go to Pa., N. J., West, South or to Canada; good reference.
6455, Textile World Record, Boston, Mass.

Overseer of Dyeing; has worked on piece dyes and worsted yarns; familiar with Klauder-Weldon and Rodney Hunt dyeing machines; 39 years of age, married; will not go West, South or to Canada; good reference.
6456, Textile World Record, Boston, Mass.

Overseer of Carding in woolen mill; has worked on all sizes of yarns and all kinds of stock; familiar with Davis & Furber machines; 47 years of age, married; good reference.
6457, Textile World Record, Boston, Mass.

Superintendent of Knitting; would consider position as foreman of knitting or finishing; worked on all kinds of ladies', misses', men's and boy's underwear, union suits and sweaters; familiar with all kinds of spring needle machines; Cooper spring needle rib machines and all kinds of latch needle underwear machines; 45 years of age, married; good reference.
6458, Textile World Record, Boston, Mass.

Master Mechanic in cotton mill; would consider position as superintendent or assistant superintendent; has worked on ginghams, table damask, flannels, quilts, yarns from 5s to 50s; familiar with practically all machines used in a cotton mill; 30 years of age; has had charge of boilers, generators and general electric equipment, construction work as well as repair departments; can handle mill engineering work and drafting; good reference.
6459, Textile World Record, Boston, Mass.

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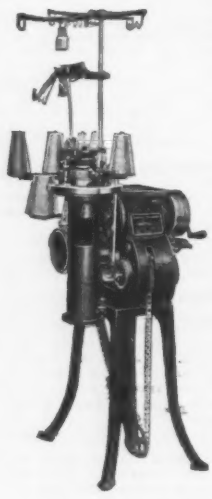

It is no longer necessary to buy hosiery machines of special diameter that can be used for only one class of goods.

By installing our Model G machines you can make all sizes of men's, women's, children's and infants' stockings upon the same machine and without the use of ribbers.

ESTABLISHED 1865

SCOTT & WILLIAMS, INC.

NEW YORK **88 Pearl Street, Boston** UTICA

KNIT.

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New Mills.

New Jersey, Millville. It is reported that a factory building in Millville has been leased by W. F. Taubel, Inc., of Riverside, N. J., manufacturers of hosiery, and that manufacturing will be started within four weeks with about 200 hands. Electric power will be used. Branch plants are also being established at Lebanon and Reading, Pa., and Camden and Trenton, N. J.

New York, Cuba. A new concern has been organized under the name of the Cuba Knitting Mills and arrangements are being made to establish a plant to manufacture men's and women's hosiery. Among the men interested are Henry C. Morgan, president of the First National Bank of Cuba; W. G. Johnson, a knitting mill man, and C. M. Morgan, who will have charge of the business end of the company. The plant will be located in a building of the Excelsior Pulley Works, which is being fitted up for the purpose, and manufacturing will be started with 14 machines, some of which are being brought here from Dalton, N. Y., where Mr. Johnson has been located. Skilled operatives will also be brought from Dalton.

*New York, Ellicottville. Work is going forward on the new factory building here for the Lander & Watson Hosiery Company, now located at Perry, N. Y. They plan to manufacture and finish here twenty-five cent to fifty cent grades of silk and artificial silk hosiery, starting with 50 machines with dyeing and bleaching equipment. They are connected with one of the largest New York selling houses and it is expected the business will increase rapidly. It has been noted previously that the Lander & Watson Hosiery Company would move from Perry to Ellicotville about July 1.

*Pennsylvania, McKeansburg. The new knitting plant being established here by C. A. Bolich and Robert P. Mengel, will begin manufacturing in about two weeks, making 160-needle half hose, under the style of the McKeansburg Hosiery Mills. 14s, 18s and 32s cotton yarns will be used. The equipment will consist of 62 knitting and 4 sewing machines, operated by steam power. Later on it is expected that a dyeing and finishing department will be established.

Pennsylvania, Philadelphia. The upper floors of the building at 505 W. Lehigh Ave. have been leased by parties who will equip them with machinery for the manufacture of seamless cotton hosiery, fine gauge, ladies' goods, which they will operate under the name of the Alma Hosiery Mills.

Pennsylvania, Philadelphia. Report has it that Henry Brown, treasurer and manager of the Brown-Aberle Company, manufacturers of full fashioned hosiery at Palethorp & Huntingdon Sts., has withdrawn from that company and is arranging to start up a plant of his own under the name of Henry Brown & Son. A portion of the Model Mills at Ontario and I Sts. has been leased, in which they will install 24 frames to manufacture full fashioned hosiery of cotton, lisle and silk.

Washington, Seattle. W. P. Dehen and M. J. Schmitt are manufacturing underwear, sweater coats, bathing suits, and athletic goods for men, women and children in a building at 3711 Ferdinand St. under the style of the Dehen & Schmitt Company. 12 knitting machines and 6 sewing machines are operated by electric power. They buy 2/20s to 2/60s lisle, and 2/15s to 2/60s worsted yarns.

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Enlargements and Improvements.

New Jersey, Belvidere. It is reported that new machinery is being installed in the plant of John E. Allen, manufacturers of misses' ribbed and ladies' hosiery.

New Jersey, Vineland. It is reported that William F. Taubel, Inc., hosiery manufacturers of Riverside, N. J., will take over and start up the knitting mill formerly operated by John Karl. Plans and specifications have been filed for a new mill to be erected adjoining the plant at Boulevard and Montrose Sts. The work is expected to begin soon. As noted in previous issues of the Advance News William F. Taubel, Inc., are also establishing new branches at Lebanon and Reading, Pa., and Millville, Camden and Trenton, N. J.

New York, Mechanicsville. An addition is to be erected at the local plant of the Union Mills, and forty more knitting machines will be installed. The mill has been running to full capacity and part of the time has been operated with a night shift in order to fill large orders for export. The main plant is at Hudson.

*North Carolina, Newton. Forty knitting machines comprise the equipment being added by the Ridgeview Hosiery Mill. These machines will be put in operation at once on men's and women's cotton hosiery. Both of the local hosiery mills have made increases within a short time.

North Carolina, Winston-Salem. It is reported that a yarn mill is to be built by the P. H. Hanes Knitting Company. With reference to this report the concern states that they are not in a position to give out information at this time. About a year ago the capital stock of the P. H. Hanes Knitting Company was increased to $2,000,000 and it has been rumored from time to time that the business would be greatly enlarged. A large lot in the rear of the present plant was purchased and it is understood that plans have been made for new buildings. They manufacture men's ribbed cotton underwear on 10,000 ring spindles, 120 latch needle knitting and 250 sewing machines. P. H. Hanes is president; P. H. Hanes, Jr., treasurer, general manager and buyer.

*Pennsylvania, Boyertown. The new mill being built for John Blood & Company of Philadelphia is under roof and will soon be completed. It is expected machinery will be installed and the plant started up before August 1. Several months ago the Allen Knitting Mills Company of Philadelphia established a branch here which has been very successful and they are advertising for more help to operate additional machinery. The Allen Knitting Mills Company manufactures ladies' union suits and vests. The new plant of John Blood & Company will manufacture hosiery.

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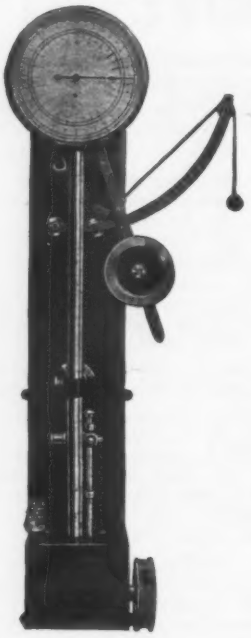
POWER YARN TESTER
PATENTED



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223-233 Eddy St., Providence, R.I.
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Cotton Waste Machinery

We supply complete plants for :

Opening, Cleaning, Carding and Spinning all kinds of Cotton Waste

on *English* and *Continental* Systems.

Sponge or Cleaning Cloth Machinery.
Wadding Machinery.
Absorbent Cotton Wool Machinery.
Engine Waste Cleaning Machines.
Rag Tearing Machines.
Cotton Blanket Plant.
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Elliot Cloth Folder and Measurer

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Send for circular.
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WOOLEN.

.....

New Mills.

*New Hampshire, Claremont. The correct name of the new wool products concern, whose organization was recently noted, is the Claremont Waste Mfg. Company. Waste, flocks and other wool products will be manufactured. The new company has capital stock of $25,000 and will occupy the building known as the old Tyler machine shop, at the corner of Main and Elm Sts., Claremont, completing preparations for beginning manufacturing as rapidly as possible. The officers are A. C. Bowman, president; Samuel Steinfield, treasurer; and Frank Steinfield, secretary. The Messrs. Steinfield have conducted a business of dealing in paper stock, rubber, metal, and iron for a number of years in Claremont.

.....

Enlargements and Improvements.

Connecticut, Stafford Springs. A new cloth dryer has been installed by the Cyril Johnson Woolen Company.

*Indiana, Seymour. Work was started June 10 on additions to the plant of the Seymour Woolen Factory Company. The changes include the tearing down of the old dyehouse and erecting in its place a new dyehouse and wet finishing room, 2 stories high and 162 feet long. In the new building the dyeing and finishing departments will be rearranged and some new equipment added. At the southwest corner of the property a new weave shed, 88 by 152 feet, with saw tooth roof, will be built. The looms will be moved from the present weave room into the new building and will be driven by individual motors. Plans for these changes were drawn by W. E. Russ, architect, of Indianapolis, and the work is in charge of Snider & Rotz, engineers, of Indianapolis. The Seymour Woolen Factory Company manufactures all wool blankets and flannels on equipment of 10 sets of cards and 76 looms, and it was incorporated in 1865. B. F. Schneck is president, treasurer and buyer.

Iowa, Nashua. Equipment is being installed in a new dye house recently erected by the Nashua Woolen Mills.

Maine, Bridgeton. Improvements are being made in the power department of the Forest Mills of the American Woolen Company, including enlarging the boiler house and installing a new boiler.

Massachusetts, Leicester. Work has been completed on the new dye house and finishing room of the Leicester Woolen Company. The addition is 45 feet long and 45 feet wide, and 16 feet high. The mill was closed while this enlargement was being made and when it is reopened it is reported that other lines of goods will be manufactured in addition to satinet cloths on which the plant has been operated. Samples of the new goods are being made. The Leicester Woolen Company has two sets of cards and 40 looms which have been operated on commission work for the Valley Woolen Mills at Cherry Valley, Mass., the cloth being finished at Cherry Valley. The new finishing department enables them to finish their own goods. Additional machinery installed includes 2 fulling mills, a hydro-extractor, bleaching equipment, dryer, washing machinery, napper, and chinchilla machines. It is expected that the plant will be running in all departments early in July.

New Hampshire, Franklin. The Franklin Mills of M. T. Stevens & Sons Company, will make improvements in their power department and have ordered two new water wheels. The main office is at North Andover, Mass.

New York, Newburgh. The Hudson River Woolen Mills have shut down for a period of one month. This is the quiet season with the concern and it was decided to close to take stock and make necessary improvements and repairs.

*New York, Oriskany. A concrete foundation has been put in for the new mill of H. Waterbury & Sons Company, manufacturers of paper makers felts and blankets. The new building will take the place of an old mill which has been razed.

*New York, Rensselaer. Preparations are being made to begin work at once on the construction of the new mill for William Barnet & Son, manufacturers of wool shoddies, to replace the old mill which was destroyed by fire in February. The contract has been awarded to Morris Kantrowitz of Albany and calls for the completion of the mill ready for machinery in three months. As noted in a previous report, the building will be 3 stories high, 351 feet long by 60 feet wide, of modern reinforced concrete construction. Every precaution will be taken to make the new mill as fireproof as possible and modern appliances will be provided for the comfort and safety of employes.

New York, Rochester. The Allen Woolen Mills are installing a new 150 h. p. engine to take the place of the old engine of 85 h. p. capacity which is being taken out. There have been a number of increases in the plant within the past few months, necessitating an increase in the power. The plant will be started up July 6, after an idleness of two weeks to install the new engine and make general repairs.

Pennsylvania, Philadelphia. The Franklin Textile Company, with 42 looms for the manufacture of cotton and worsted dress goods, has been started up by John Fulton, in the Megowan Mill, Adams and Church Sts., Frankford. The Standard Beaming Co., also owned by Mr. Fulton and located in the same building, has been consolidated with the new company.

Pennsylvania, Philadelphia. A. J. Gordon & Company, operating the Scotland Mills at Mascher and Somerset Sts., in order to increase their facilities for manufacturing dress goods, men's wear, etc., are removing their plant to Kensington Ave. and Huntingdon St., where they have taken over two floors or more and will install a number of new looms in addition to the 48 narrow looms which they are now operating.

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MIDDLETOWN, CONNECTICUT

Enlargements and Improvements.

Rhode Island, Woonsocket. Twelve more broad looms have been set up in the local plant of the Uxbridge Worsted Company in the Glenark Mill. This equipment is said to be the first installment of an addition of fifty more looms that will be installed from time to time.

Utah, Provo. Plans are being made for reorganizing the Knight Woolen Mills and interesting a large amount of new capital. T. L. Boone has become interested in the concern and through his efforts it is reported a large amount of new capital will be invested and extensive enlargements and improvements will be made in the plant and a distributing house established in Salt Lake City. The Knight Woolen Mills have manufactured cassimeres, flannels, mackinaws and similar goods on 9 sets of cards and 72 looms since the present company took hold and started up the plant after a long period of idleness. A few weeks ago the directors approved plans for an enlargement, 46 by 140 feet, to be equipped as a clothing manufacturing department using the products of the woolen mill. The present officers are Jesse Knight, president; Charles W. Nibley, vice-president; W. Lester Mangum, secretary and treasurer, and T. L. Boone, general manager.

Wisconsin, Milwaukee. I Barnett & Son, 484 Virginia St., manufacturers of wool extracts and shoddy, are installing three 60-inch modern shoddy cards, also pickers. This new equipment will more than double their present capacity.

Pennsylvania, Philadelphia. The Frankford Bleachery, operated by Flynn & Gray on Factory St., Frankford, on the bleaching and finishing of cotton fabrics, towels and knit goods, are arranging for the enlargement of their present plant by the erection of an annex in which they will install a department for the finishing of bed spreads, 90 inches wide, and huck towels. The other departments of the works are quite busy.

Pennsylvania, Philadelphia. The Ashdale Bleachery, now located in Manayunk, where they are engaged in the bleaching of hosiery, underwear and towels under a new method, are arranging for the removal of their plant to larger quarters, presumably at Collins, Huntingdon and Martha Sts., where they are negotiating for a large building formerly used as a dyehouse. When finally located they will also bleach cotton yarns for the knitting and weaving trades and also bleach artificial and natural silk.

*Rhode Island, Pawtucket. Construction work has been started on the addition to the plant of the Seekonk Lace Company on Brook St. On the completion of the new building they will install 11 new lace machines with accessory machinery for making cotton and silk dress laces, giving a total of 25 lace machines in all. It is expected the building will be ready for occupancy by the first of November and some of the new equipment has been ordered and will be delivered about that date. The enlargement will be of brick, 100 by 50 feet, and for the greater part will be 2 stories high. Frank G. Rowley, treasurer and manager of the concern, is also a contractor and has charge of the work. The Seekonk Lace Company

Enlargements and Improvements.

has capital stock of $300,000. Thomas H. Tarbox is president; Frank G. Rowley, treasurer; George R. Ramsbottom, agent and buyer. Stern & Stern, 79 Fifth Ave., N. Y., are the selling agents. The concern is at present working day and night shifts, keeping the machinery in almost continuous operation.

Rhode Island, Philipsdale. The River Spinning Company, of Woonsocket, has been granted exemption from taxation for a period of ten years on a new branch plant which is to be established here. It is reported that an investment of about $100,000 will be made and the plant, which will be equipped to bleach raw cotton, will be ready for operation within two months. The proposed site is on the Seekonk River, a short distance north of the Glenlvon Dye Works, where workmen are already engaged in making ready for the beginning of construction operations.

Pennsylvania, Philadelphia. The Adelphia Mfg. Co., 4120-4146 Frankford Ave., Frankford, manufacturers of rags which they cleaned and dyed for the carpet and rug trade, have shut down their plant. It is not known whether it will be started up again or not. The building is for rent.

*Wisconsin, Janesville. Arthur G. Jones, formerly superintendent of the Rock River Woolen Mills, is the proprietor of the new Jones Dyeing & Bleach Works, which started operations here a few days ago. Dyeing of all kinds of raw stock is done, also scouring and dyeing of skein yarns.

*Pennsylvania, Mifflintown. An addition will be built to the Juniata Hosiery Mills during July and August with a capacity of 30 knitting machines and accessory equipment. Fifteen machines will be added on the completion of the building and a further installation of 15 machines will be made after January 1, 1916. They manufacture women's 25-cent and 50-cent fiber silk hosiery, selling the product through A. V. Victorius & Co., N. Y. City. K. O. Nestler is superintendent and buyer.

*Pennsylvania, Milton. The increase in the equipment at the West Branch Knitting Company, recently noted, consists of the installation of the entire plant of the Suffolk (Va.) Hosiery Mill, which has been purchased and moved to Milton. This will give an increase of sixty 220-needle machines, 12 ribbers, 10 loopers, with finishing machinery, etc. With the addition of this machinery they will have a capacity of about 800 dozen of hose per day, manufacturing principally silk and fiber silk goods. Manufacture of balbriggan and mesh underwear is also carried on in an entirely separate building, featuring "Twintex" underwear.

*Pennsylvania, Parker's Landing. Finishing, fulling, washing, drying and extracting machinery has been added to the equipment of the Parker Woolen Mills. This concern was formerly a woolen and merino knitting yarn mill and recently added 16 knitting machines for making men's woolen and merino half hose. The present officers are W. S. Thompson, president; Alf A. Schenck, vice-president; Arthur A. Conn, treasurer and manager, and J. O. Conn, secretary.

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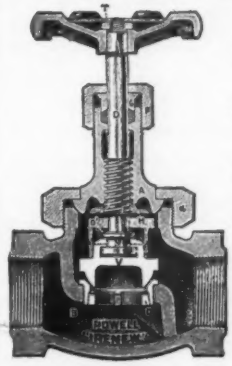

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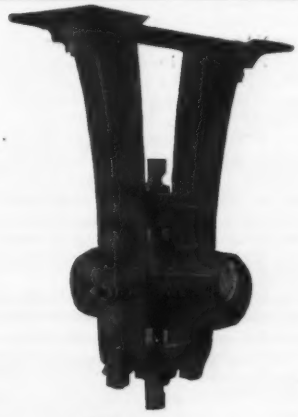

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Chapter III. Ingredients Used to Soften the Size and Yarn, Oily and Greasy Substances.
Chapter IV. Soaps – Manufacture of – Analysis of – Use in Sizing.
Chapter V. Substances Used for Softening and for Giving Weight and Strength.
Chapter VI. Ingredients Used for Preserving Size from Mildew.
Chapter VII. Size Mixings, and the Methods and Plant Employed in Mixing Size – Size Mixings Which Cause Tendering.
Chapter VIII. Sizing – The Slasher – The Slasher Tender.
Chapter VIIIA. Pure Sizing – Medium and Heavy Sizing – Colored Sizing.
Chapter IX. Ball or Warp Sizing.
Chapter X. Hank Sizing and Bleaching.
Chapter XI. The Preparation of the Yarn for Weaving and the Testing of Sized Yarn.
Chapter XIII. The Analysis of Sized Grey Cloth.
Chapter XIV. Damage to which Sized Cloth is Liable.
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KNITTING MILL NEWS

Pennsylvania, Philadelphia. The Hadfield Hosiery Co., Kensington Ave. and Huntingdon St., manufacturers of children's and infants' seamless hosiery on 225 latch needle knitting machines, have recently installed two full fashioned frames, for the making of fashioned goods. They sell direct.

Pennsylvania, Philadelphia. Local builders are estimating on plans for alterations and additions to the plant occupied by H. A. Romberger, manufacturer of hosiery on Orleans St., above Frankford Ave. The plans call for a new building 40 by 100 feet, with bids to be in by June 21.

*Pennsylvania, Pottstown. The addition being built on the Pottstown plant of the Century Knitting Company will increase the concern's capacity by one-third, and in 1916 a million and a quarter dozen garments will be turned out. A large order for knitting machines has been placed. As noted in previous reports construction work has been started on the foundation for the new addition. The Century Knitting Company, Inc., manufactures the "Fitrite" underwear, sold through Hecht & Campe, Inc., of New York. The main mill of the company is at Spring City, Pa.

Pennsylvania, Reading. It is reported that George W. Hawk, Co., Inc., Walnut and Pearl Sts., will rebuild their plant recently damaged by fire.

Rhode Island, Providence. Larger quarters at 34 Bassett St. have been taken by the New England Hosiery Company, manufacturers of fine mercerized and silk infants' hosiery, and manufacturing started in the new location June 1. This concern was organized about a year ago and began operations at 285 Thurber Ave. Ralph B. Leinbach is president and treasurer; Gilbert R. Cordin, vice-president; and Ernest P. Cordin, superintendent.

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Mills Starting Up.

*Georgia, Gainesville. The new Merck-Hetrick Mfg. Company has begun operation. This concern was recently organized to manufacture hosiery on 25 knitting machines, and has equipped a plant in the B. H. Merck Bldg. This project has no connection with the Gainesville Hosiery Mill project of A. C. Meldrum. B. H. Merck is president, treasurer and buyer of the concern; W. F. Hetrick is the superintendent and Hinchman, Vezin & Co., N. Y., will sell the product. Electric power will be used. B. H. Merck is a local wholesale grocer and owns the building in which quarters have been taken. He states that the overhead expenses will be very low, that a competent superintendent has been secured and with the selling arrangements made the concern ought to grow rapidly.

*New York, Kinderhook. Manufacturing was started June 21 in the branch mill established here by C. F. Hoag Company, of Poughkeepsie. Gloves and mittens are being manufactured and employment given to 55 hands.

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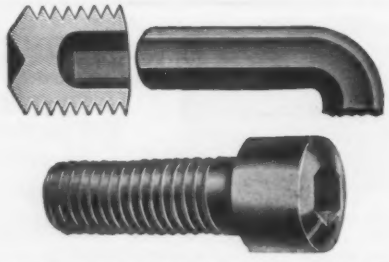

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FACTS AND GOSSIP.

*New Jersey, Paterson. The United States Silk Mfg. Company, incorporated a week ago with capital stock of $50,000 to manufacture silk and other textile fabrics, is a reorganization of the concern manufacturing broad silks at 15 North 2nd St. John Marcus is president and Samuel Bearson, treasurer, superintendent and buyer.

*New Jersey, Trenton. Plans are being made for the new branch plant to be built on Adeline St., Trenton, by William F. Taubel, Inc., of Riverside, N. J. It is said that 300 hands will be employed in the local plant.

New York, Middletown. Additional machinery is being started up by the Raw Silk Converting Company and they are advertising for fifty additional hands. This concern took over and started up the Middletown plant of the Haledon Throwing Company a short time ago. R. W. Souter is manager.

New York, New York City. A charter has been granted the H. Schlien Silk Co., Inc., with capital stock of $30,000 to manufacture silk and other textile products. The incorporators are Harry and Fannie Schlien, and Nathaniel Fishman, N. Y.

*New York, Niagara Falls. Efforts are being made to interest capital in reopening the plant of the Niagara Falls Linen Company. Among the men interested in the project are Hughes Fawcett, the New York importer and selling agent, W. T. Ransom, of the Niagara Textile Company, Lockport, N. Y., and Joseph Aldred, of the Lockport, N. Y., Textile Company. The plant may be started up with added equipment on the manufacture of a material different from that which the Niagara Falls Linen Company produced.

New York, Nyack. The United Piece Dye Works of Lodi, N. J., are offering for sale the dyeing and finishing plant here which was purchased several years ago. The property has been placed in the hands of Joseph P. Day, 31 Nassau St., New York City, for sale.

New York, Valatie. The Valatie Yarn Company has been incorporated with capital stock of $10,000 to manufacture wool spun cotton and merino yarns by W. G. and Jesse Barnet, of Albany, and Theodore Tannenwood, of Valatie. The old Valatie Knitting Mill, more recently occupied by the Standard Mfg. Company, was started up as a yarn mill several months ago under the name of the Valatie Yarn Company, by Winthrop H. Moore, who is treasurer of the Stark Textile Company, Inc., of Valatie. The Stark Textile Company, Inc., had no interest in the starting up of the mill beyond an interest in being able to obtain a local supply of yarns. Mr. Moore, who was interested in the organization of the company personally, has no further connection or interest with the plant or in the corporation just organized to continue the business of the Valatie Yarn Company.

North Carolina, Concord. A new cotton mill project is being agitated by J. A. Goodman and Will Flowe. A proposition has been made these men to purchase the Roberta Mfg. Company's mill but it is probable they will establish a new plant.

FACTS AND GOSSIP.

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*Pennsylvania, Pittsburg. The Aetna Chemical Company, a concern reliably reported to be of ample financial resources, is erecting three extensive plants for the manufacture of a wide range of products in the vicinity of Pittsburg. At Carnegie benzol and toluol will be produced from crude petroleum by the Rittman process. The principal product of this plant will be carbolic acid. At Oakdale nitric acid will be manufactured with an initial capacity of 16 tons per day. This plant will be completed within a few weeks. At Noblestown the smallest of the three plants will be located, and will manufacture the more refined chemical products of benzol such as diphenylamine, methyl aniline and naphthaline. The three plants will represent an initial investment of nearly $2,000,000, and constitute one of the largest single industrial developments in recent years in the Pittsburg district. Extensions of all of the plants on a large scale are contemplated by the Aetna Chemical Company as business conditions warrant.

Pennsylvania, Reading. H. I. Felberbaum, proprietor of the Lion Silk Mills, has purchased the property at 11th and Marion Sts. occupied by the Lion Silk Mills, for $73,000. It is understood that the plant is to be increased. The equipment at present consists of 200 looms on which broad silks are manufactured. A plant is also operated at Allentown.

*Pennsylvania, Trevorton. Probably no increases will be made at present at the Trevorton mill of J. H. & C. K. Eagle, recently purchased by the concern from the Industrial Stock Company. Eventually the plant is to be greatly enlarged. Broad silks are manufactured on present equipment of 200 broad looms operated by electric power. The main plant is at Shamokin.

South Carolina, Langley. Details of the reorganization of the Langley Mfg. Company here, the Seminole Mfg. Company at Clearwater, and the Aiken Mfg. Company, at Bath, have been sent to stockholders. The mills will be operated separately under the names of the Langley Mills, the Seminole Mills, and the Aiken Mills. William C. Langley will be president; George E. Spofford, vice-president and general manager; and Charles H. Law, secretary and treasurer. It is understood that the plants are to be placed on a better producing basis and some extensions and improvements and the installation of new machinery are contemplated. The stockholders in the old companies will have issued to them new stock by conforming to certain requirements of the Creditors' Committee, which bought the properties and worked out the reorganization plans.

*Tennessee, Johnson City. Thomas P. Boone, secretary of the Johnson City Chamber of Commerce, reports that plans for the new cotton mill and two smaller knitting mill companies have not matured far enough for any report to be made.

*West Virginia, Philippi. All of the capital needed for the projected new Philippi Woolen Mills Company has been subscribed except $1,500, according to report. This project is headed by W. L. Fordyce, who was interested in the Webster Woolen Mills Co., Webster, West Va., whose plant was burned a year or two ago. A charter has been secured with authorized capital stock of $25,000.

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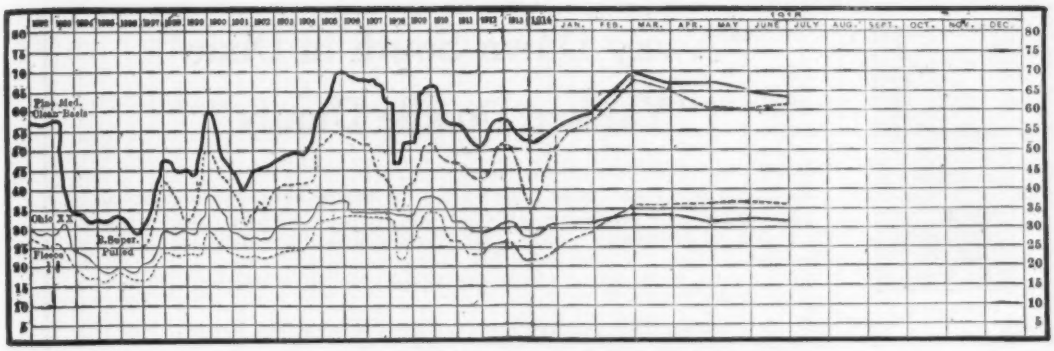

CHART SHOWING RANGES IN THE PRICE OF WOOL TO DATE.

THE WOOL MARKET

Wool values have continued to advance in spite of the dull trade in the goods market. This apparent anomaly is explained by the extraordinary conditions resulting from the war, which has brought with it an unprecedented consumption of wool and the interruption in the regular means of transportation. Many in the trade are disturbed by the high values prevailing for wool at a time when domestic consumption is of wool below the normal. As a result there is a pronounced disposition in many quarters to operate conservatively and avoid speculation. Many domestic mills are running slack and it is freely predicted that wool values will be forced down by the refusal of buyers to pay the high prices prevailing. In opposition to this view others argue that American conditions are not controlling the wool market and that values will be fixed in Bradford rather than in the United States. With 64s tops selling at 94 cents in Bradford it looks at this writing as if the decline which many fear was still far in the future.

Mills Starting Up.

*Massachusetts, Clinton. Manufacturing will be started about July 1 by the new Clinton Textile Mfg. Company, which recently organized with capital stock of $10,000 to start up the Brodfelt Worsted Mill at 792 Main St. Worsted dress goods will be manufactured on 22 looms, and dyed and finished. W. P. Bowers is president; O. D. Jewett, treasurer and office manager; and S. G. Hall, agent and buyer. Grant S. Kelly & Company, N. Y., will be the selling agents. Messrs. Jewett and Hall are now at work in the mill putting things into shape for starting up. The building is owned by Mr. Bowers and C. L. French, one of the directors, while the machinery was owned by W. R. Dame. The new concern has purchased the machinery.

Massachusetts, Holliston. A new company is being organized under the name of the Holliston Woolen Mill Company to take over and start up local plant of the Darling Woolen Mill Co., which has been idle for several months. Application has been made for a charter with capital stock of $10,000. William Shanks, who has been superintendent of the plant, will be treasurer and superintendent of the new company. Recently the property was purchased by Mark Harris of N. Y., and it is understood that Mr. Harris, with other New York parties, is interested in the reorganization.

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FOR COTTON

We offer these products in all shades for the dyeing of cotton in any form. Among them will be found colors specially adapted to meet the various requirements of fastness to light, washing, cross dyeing and fulling.
Shade cards and samples, with full information, cheerfully furnished on application.

AMERICAN DYEWOOD COMPANY
NEW YORK PHILADELPHIA BOSTON HAMILTON, ONT.

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Nearly 2000 in Daily Use

Double Geared

"Away Down South in Dixie"

"Yankee Doodle Dandy"

Listen to the music! It goes this way:—

One of the finest Cotton Mills in the south is the **Meritas Mills** at Columbus, Ga.

Last fall they built an addition to the big plant and being SMART ONES that read the papers, advertisements and all, they equipped with Ridgway Steam Hydraulic Elevators.

After owning the Ridgway Elevator all winter they have this week come and ordered MORE.

Write to Meritas Mills, 320 Broadway, N. Y., or Columbus, Ga., and ask them why Ridgway Elevators? Guess you'll learn a thing or two.

Up along the Connecticut River is the little town of Somersville in Connecticut.

Here is the **Somersville Mf'g Co.** with a fine factory making Woolens.

Two years ago they sent for us to change the Elevator in No. 1 Mill to Ridgway Steam Hydraulic.

A year ago they had us change the Elevator in No. 2 Mill to Ridgway Steam Hydraulic.

And now they have just built No. 3 Mill and equipped it with Ridgway Steam Hydraulic.

If you are REAL SMART Mr. Millowner and have a steam boiler, before you buy any elevators you will investigate and find what it means to

"Hook 'er to the Biler"

CRAIG RIDGWAY & SON CO., Coatesville, Pa.

ELEVATOR MAKERS TO FOLKS WHO KNOW

BLEACHERS!

Cotton, Wool, Silk or Mixtures

Have you thoroughly considered that the competitors of your mill can now furnish goods of fast white, soft, elastic, odorless, not weakened?

Of course you know by this time that the only way you can produce these qualities is by means of Peroxide bleaching and that you can get all needed practical help from us

THE ROESSLER & HASSLACHER CHEMICAL CO.

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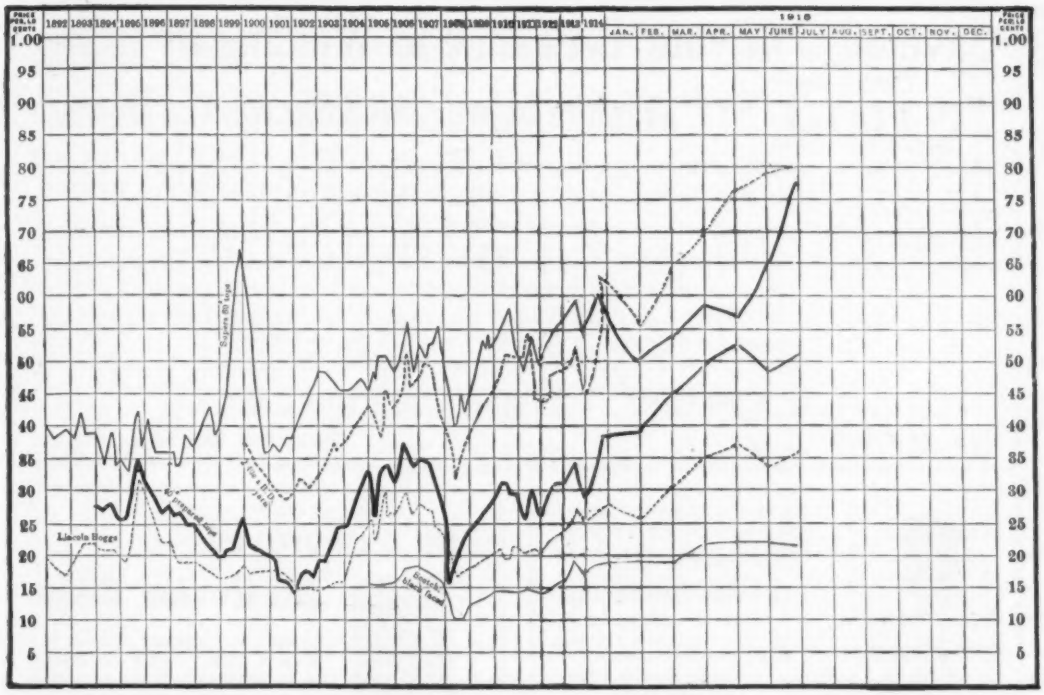

CHART SHOWING COURSE OF PRICES FOR WOOL, TOPS, AND WORSTED YARN AT BRADFORD, ENGLAND

THE BRADFORD MARKET

Bradford, Eng., June 25, 1915.

The highest previous price for merino tops was 70 cents, made in 1899 for 64s quality. The price of 80 cents has been paid lately; 84 cents is being asked and 90 cents is talked of as an imminent probability. After booking about as much business at profitable rates as they could handle, topmakers advanced quotations to obtain a rest. Demand has followed to the level that was expected to prove finally prohibitive and for the present price is a consideration altogether subordinate to delivery. Wool cannot be combed quickly enough. There is too little labor to keep the present combs running at their full efficiency and new combs cannot be added even if they could be delivered by the comb builders, whose hands are full of French and Belgian orders.

Coarse crossbreds have been almost lost to sight. Although in sympathy with merinos fine crossbreds are very dear, 56s fetching up to 68 cents. Holders of qualities suitable for army clothing decline to be frightened into reducing their prices by the temporary absence of government orders and count on a resumption of buying, although there are really no data on which to form an idea of the probabilities.

The English clip is coming in and the condition of it is favorably reported on by buyers. All ideas of buying the clip cheaply have had to be abandoned and prices in the country come fully up to the Bradford level. Prices are, however, not being pushed higher by merchants and a certain amount of wool is being left upon farmers' hands.

Enlargements and Improvements.

Massachusetts, Clinton. The brick building used as a main office by the Clinton plant of the Bigelow-Hartford Carpet Company is to be moved and fitted up as a recreation building for the employes. This change will make room for a mill which will be built to connect mills 2 and 3. The main office will be in a building on School St. where there is a sub office now.

Massachusetts, Clinton. A new drying machine has been installed in the plant of the Burton Company and is now in use. As noted in previous reports the Burton Company has taken over the Victor Mill and is making extensive changes and improvements and equipping it to manufacture woolen yarns.

Massachusetts, Lawrence. A 5-story addition, 106 feet long, is to be built to the plant of George E. Kunhardt, manufacturers of woolen and worsted fabrics. Charles T. Main, the mill architect and engineer, has made the plans.

Save 40% of your Breakage in Winding by using

TRADE MARK
"NIGRUM" graphite impregnated Skewers and Dowels
REG.U.S PAT.OFFICE

Nigrum Dowels run smoothly, require no oiling, last forever, and cost but little more than your old style.

We are also manufacturers of "NIGRUM" Oil-less Saddles and Bearings as well as the famous TRADE MARK **"BOUND BROOK"** REG.U.S.PAT.OFFICE Graphite and Bronze Bearings for heavy work

We are specialists in Oil-less Bearings. All Genuine Graphited Oil-less Bearings have always been made at Bound Brook, N. J., in the United States of America.

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SHOPS
Greenville, Pa. (Pittsburg Dis't)
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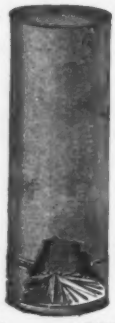
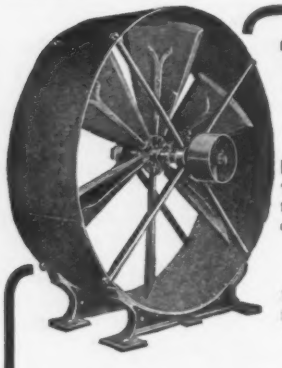
Hill's Improved Tin Roving Cans



are especially adapted for use in Woolen Mills, IXXX Tin Plate body, side seam locked and grooved—made by machinery—every can alike. Special pattern top and bottom rings made of ¾ inch iron welded at joints and tinned. A wide "kicking band" beaded and soldered on the body. We can't tell all their good points here. Let us send full details.

Write for prices.

James Hill Mfg. Co., *Providence, R. I.*



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Because: The blades being adjustable the draft can be regulated at will—**without changing the speed**—and can be made to blow **in** or **out**; the frame, drum, arms, shafts, etc., being made of STEEL, the minimum of weight and the maximum of durability are attained; and—

Because the Self-Oiling Journal Boxes

make it possible to run a Perkins Fan much longer, **without oiling,** than safety would allow you to run any other ventilating fan.

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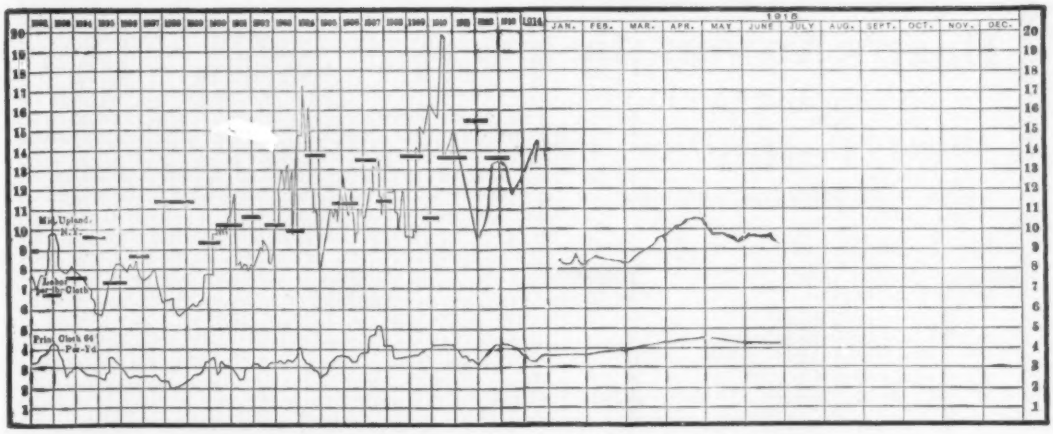


CHART SHOWING RANGE IN THE PRICE OF COTTON TO DATE

The short, heavy, horizontal lines indicate the size of the cotton crops in millions of bales.

THE COTTON MARKET

Bearish sentiment has influenced the cotton market in all parts of the world. On the one hand the prospects for the coming crop have been unusually favorable, while on the other hand the export trade in cotton has suffered a material decline. With the Allies in control of the water routes and fighting a life and death battle for supremacy, there is little likelihood that they will allow cotton to be shipped from this country to Germany and Austria. This prospect of the continuance of the embargo on cotton shipments is strengthened by the fact that cotton is necessary for much of the ammunition that is now being used against the Allies. The belief prevails in the trade that the Allies will prolong negotiations with the United States as long as possible without refusing point blank to allow cotton to be shipped to their enemies, but that if they are forced to give a categorical reply it will be a refusal to allow the trade to continue. Weather reports from the cotton belt have been favorable and it is believed that a large crop will come on the market. The movement into sight from August 1st to June 25th is reported by the "Chronicle" for the last two years as follows:

1914-15, June 25, 14,855,009 bales
1913-14, June 26, 14,587,709 bales

The same authority estimates the world's visible supply on June 25 at 5,912,400 bales, as compared with 4,132,575 on the corresponding date of 1914; 3,491,909 bales in 1913 and 3,384,581 bales in 1912.

South Carolina, Anderson. An addition, 72 feet long, will be built to the main mill of the Equinox Mill, and a number of additional cottages will be built for employes. When the addition to the main building is completed a rearrangement of machinery will be made and it is not understood that any new machinery will be required. Another improvement to be made by the concern is the installation of a street lighting system in the mill village.

*South Carolina, Orangeburg. Changes being made in the plant of the Orangeburg Mfg. Company, consist of improvements in the power department. The plant has been shut down for two weeks while the changes are being made.

*South Carolina, Pacolet. The Fiske-Carter Construction Company has been awarded the contract for building 250 frame dwelling houses for the Pacolet Mfg. Company. The present cottages, which were built in 1882 and 1893, are not considered in keeping with the rest of their plant, so they have let the contract for remodeling the village. They will possibly spend something like $75,000 to $100,000. The mills are of a modern type of construction and equipment, having been rebuilt just after the destruction caused by flood and cyclone of their Nos. 1 and 2 Mills in 1903.

Texas, Brenham. Improvements and additions are being made at the South Texas Cotton Mills, manufacturers of sheetings, including the installation of new spinning frames. The mill is running full time at full capacity and at intervals in the recent past has been running at night.

*Texas, McKinney. A warehouse, 50 by 100 feet, of standard slow burning construction, equipped with a sprinkler system is being built by the Texas Cotton Mill Company. As noted in previous reports 32 new box looms have been installed, and the concern recently added 4 cards. These changes give equipment of 10,280 ring spindles, and 352 looms. Colored cotton goods are manufactured, and sold through Converse & Company, N. Y. J. H. Ferguson is president; W. B. Newsome, treasurer; Paul K. McKenny, general manager and buyer; and W. M. Mosheim, superintendent.

Baer's Automatic
Yarn and Cloth
Tester
MOTOR DRIVEN

Sold Exclusively Through
ALFRED SUTER
Textile Engineer
200 Fifth Ave., New York

The Metallic Drawing Roll Co.
INDIAN ORCHARD, MASS.
MANUFACTURERS OF
Metallic Rolls

Especially adapted for Cotton Mills. 25 to 33 per cent more Production Guaranteed. Weight Reduced 33 to 50 per cent. No Leather Covering Bill.

WRITE FOR PARTICULARS

Massachustts, Fall River. The Border City Mfg. Company is replacing old spinning mules with ring frames. Other local mills are making or are reported contemplating making similar changes.

*Massachusetts, Fitchburg. Construction contract for the new dye house of the Parkhill Mfg. Company has been awarded to Wiley & Foss. The building will be 200 feet long, 100 feet wide, 4 stories high. It will replace the wooden buildings now used for dyeing purposes, and it will be built over and around the present wooden buildings so that work will not be stopped during the process.

Massachustts, New Bedford. The Potomska Mills have awarded the contract to the J. W. Bishop Company for the construction of a new boiler house, 50 by 30 feet, with a smoke stack, 150 feet high. The building will be of brick and concrete construction and will be about 40 feet high. It will accommodate three boilers which will give the mill considerable additional power. Construction work will take about two months. P. F. Sheldon & Sons, Providence, R. I., prepared the plans.

*New Jersey, Cedarville. William H. Willis, who was reported previously as arranging for the purchase of the Bell Cotton Fabric Mill, acted for C. C. Ball. Mr. Willis was the manager of the Manayunk, Philadelphia, plant of the Aberfoyle Mfg. Company. He will be manager and buyer of the Cedarville Mill with an interest in the business. Manufacturing will be started next week. It is intended to enlarge the plant by putting in 20 more jacquard looms in addition to the 20 looms now in the mill, and also to build a bleachery plant. Turkish towels, Terry fabrics and novelties will be manufactured from 20/2, 30/2, 14/1 and 16/1 warp yarns, and 12/1 and 16/1 filling yarns. The product will be sold direct.

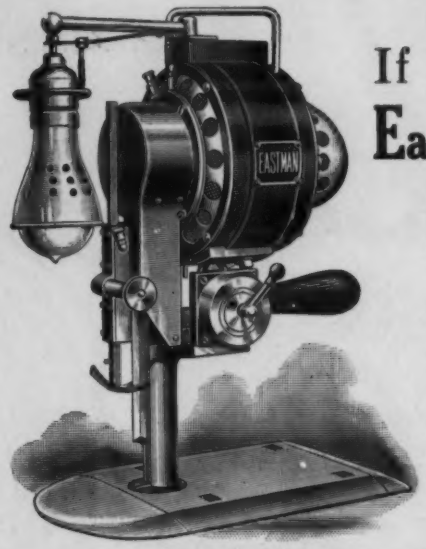
North Carolina, Draper. Plans will soon be completed for the new 1,000-loom wide sheeting mill to be built here by the Thread Mills Company as an addition to the German-American Mill. P. F. Sheldon & Sons, Providence, R. I., are the architects and engineers.

*North Carolina, Spray. Specifications for the enlargement to be made by the Thread Mills Company will soon be sent out to contractors. As noted in a previous report a 3,000 h. p. central steam power plant will be built, also a new bleachery and a 500-box-loom fine weaving mill. At the German-American Mill of the concern, located at Draper, a new 1,000-loom wide sheeting mill is to be built, as noted in another part of this issue. P. F. Sheldon & Sons, Providence, R. I., are the architects and engineers.

North Carolina, Wilmington. A 2-story addition to be equipped for finishing is to be erected by the Delgado Cotton Mills Company, manufacturers of ginghams, shirtings and similar goods.

Rhode Island, Hope. A 1-story addition, 50 by 35 feet, is being built to a cotton warehouse of the Hope Company, and it is reported that opening and cotton conveying machinery will be installed.

Rhode Island, Natick. Six new boilers are being installed in one of the mills of B. B. & R. Knight.



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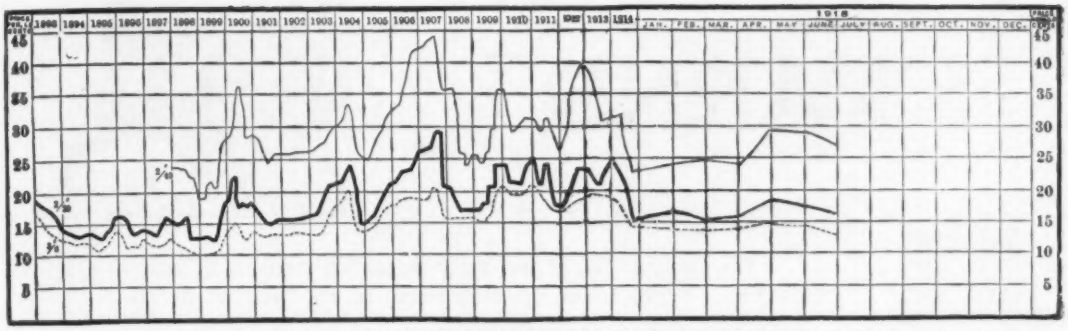

GRAPHIC CHART SHOWING RANGE IN THE PRICE OF COTTON YARN TO DATE.

THE COTTON YARN MARKET

The market continued to mark time with prices somewhat easier toward the end of the month. The question of securing dyestuffs at a reasonable figure is disturbing the trade far more than the price of yarn. A half to one cent a pound on 2/20s warps or any other staple number has little effect on the price of fabrics compared to dyeing costs which may be from three to six cents per pound with some colors at even higher figures. Under these conditions combined with the indifference of buyers, manufacturers are pursuing a hand to mouth policy. Here and there, however, manufacturers are picking up anything that looks cheap and storing it away for future requirements. From this it is evident that they have little doubt regarding the future demand and some of them predict a busy summer.

Other manufacturers are pessimistic and make the claim that with dyestuffs at the exhorbitant prices now demanded, no buying of goods at present and both yarns and goods accumulating, they can see little in the near future to make them feel hopeful. These manufacturers have overlooked two influences, however, which are having a decided effect on the yarn market. One is the gradually increasing export business from Latin America, and the second is a demand which has developed from duck manufacturers who have apparently had large orders placed with them from abroad. Manufacturers making this material find themselves unable to spin a sufficient quantity of yarn to take care of their requirements. Spinners have not been affected seriously during the dull months and continue to hold up prices on the basis of the present raw cotton quotations.

The demand for light weight underwear yarn is quiet and sales are somewhat scattered as the time is now near when the midsummer season reaches its end and many of the knitters of this class of goods take advantage of the opportunity to shut down their plants for repairs previous to going on to their next season's work. A great many of the mills have bought their yarns for delivery throughout the fall months and, in some instances, at extremely low prices. Whether this business has been placed with the spinners is a question and these low priced orders have in many cases helped to disrupt the market and forced a good many houses to take offers much below the ideas of the spinners. There seems to be a very bright prospect so far as the light weight underwear business is concerned, as the past season has been rather irregular and the demand for goods has been about up to the weekly and monthly production of the various mills. The heavy weight manufacturers are now beginning another season and the prospects for future business with them is also brighter. The fact that cotton today is sold practically on a cost basis has led many of the manufacturers to buy in advance fo· their needs.

There is an improved situation among the hosiery mills, especially those making fine gauge goods and using artificial silk and mercerized yarns.

Eastern Cops

6s	16¼
8s	15¾
10s	17¼
14s	17¼
16s	18¼
18s	18¾

SPUN SILK YARNS

We specialize on 2 and 3 ply Spun Silk yarns in all sizes put up on cones, tubes, spools or skeins in the grey or dyed. Let us figure on your requirements.

Nonotuck Spun Silk is made in the same mill, under the same careful supervision as the famous Corticelli Spool Silk, which has won 40 Highest Awards for superiority at Expositions at home and abroad. Send for samples.

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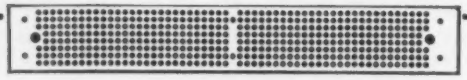

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36s	24½
40s	25½
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18s	19½
20s	20½
24s	21½
26s	22½
30s	23½
36s	26
40s	28
45s	32
50s	34
55s	40
60s	43

Eastern Two-Ply Warps, Carded Peeler

2/30s	24
2/36s	25½
2/40s	28½
2/45s	33
2/50s	35
2/60s	44

THE PHILADELPHIA MARKET

7s and coarser	15½
8s and 9s	15½
10s	16
12s	16½
14s	17
16s	17½
18s	18
20s	18½
22s	19
24s	19½-20
26s	20½
30s	21½
40s	27
50s	34

Southern high grade mule yarns:—

Cones

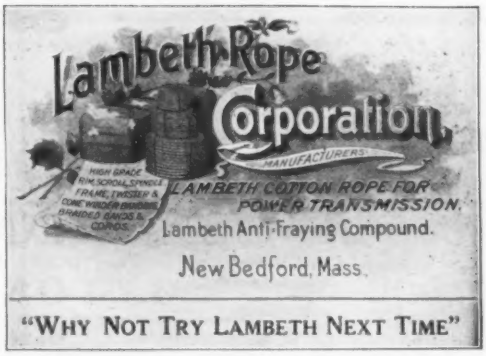
10s	18
12s	18½
14s	19
16s	19½
18s	20-20½
20s and 22s	21-21½
24s	22

Southern frame yarn, lower grades:—

6s and 8s	15¼
10s	15½

Eastern cones (high grade quality):—

10s	18½
12s	19
14s	19½
16s	20½
18s	20½-21
20s and 22s	21½-22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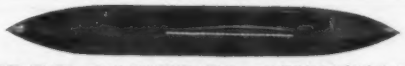

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HIGH GRADE YARNS

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JENCKES SPINNING COMPANY

PAWTUCKET, RHODE ISLAND

COTTON YARNS

CARDED and COMBED, in Nos. 10 to 120, from PEELER EGYPTIAN and SEA ISLAND COTTONS
MERCERIZED YARNS, IN SINGLE OR PLY, A SPECIALTY

LINDSAY THOMPSON & CO., LTD.

FLAX SPINNERS BELFAST, IRELAND

Linen Weaving and Knitting Yarns

LINEN THREADS OF EVERY DESCRIPTION

T. J. PORTER & SONS *Selling Agents,* Philadelphia

Large Stocks Quick Delivery

HUGHES FAWCETT

115 and 117 Franklin St., New York

Linen Weaving and Knitting Yarns

Linen Jacquard Harness Twines

And Linen Yarns and Threads for every purpose

Turkey Red Yarns

LARGE STOCK PROMPT DELIVERIES

Industrial Tape Mills Co.

Jasper and Huntingdon Sts. Phila., Pa.

Manufacturers of

NARROW FABRICS

SPOOL TAPES. STAY BINDINGS AND BRAIDS

Also Sole Manufacturers of

SAXON

New Guaranteed Non-Shrinkable Tape

F. W. MAURER & SONS CO.

MANUFACTURERS OF

Fringes, Tapes, Bindings & Narrow Fabrics

Office and Factory: WAYNE AVE. and BRISTOL ST.
PHILADELPHIA

WRITE — FOR SAMPLES AND PRICES ON SEWING AND SPLICING THREADS IN ALL COLORS TO → TO FLORENCE THREAD CO. FLORENCE, N.J.

HOSIERY AND UNDERWEAR MAKERS WHO WANT TO MATCH COLORS - WRITE

WEIMAR BROS. MANUFACTURERS OF **Cotton Mercerized Tapes**

SPOOL TAPES, BINDINGS AND NARROW FABRICS FOR UNDERWEAR AND OTHER TRADES

Phone Connections. Works, 2046-48 Amber Street, PHILADELPHIA, PA.

KROUT & FITE MANUFACTURING CO.,

MANUFACTURERS OF

Silk, Cotton and Mercerized Narrow Fabrics

SPOOL TAPES A SPECIALTY

TELEPHONE CONNECTION OFFICE AND MILL ALLEGHENY AVE. AND EMERALD ST., PHILADELPHIA

The Ramie Agency

Manufacturers' Agents

New York

Ramie Yarns and Threads

HAVE REMOVED
TO NEW AND LARGER QUARTERS AT

432 FOURTH AVE. Corner of 29th St.

Skein yarn (mostly Sorthern):—	
4s and 8s soft	14½
10s and 12s	15-15½
14s and 20s	16-17
22s	17½
10/2	15
16/2	16
20/2	17
30/2	19½-20
40/2	26
50/2	34
60/2	41
8/2	15½
7/6	15½
Southern warps:—	
10/1	15
14/1	15½
16/1	16
20/1	17
22/1	17½
26/1	19
30/1	21
8/2	15½
12/2	16
14/2	16
16/2	16½
20/2	17½
26/2	19
30/2	21
40/2	29
50/2	34

THE LINEN YARN MARKET

There has been a very decided inclination to do a more extensive business in linen yarns than has been done for many weeks past, especially in heavy numbers, both in lines and tows, and prices for these numbers have advanced considerably. Spinners are refusing business as they are fully occupied and are not disposed to sell any future lots unless at very considerable advances which cannot be obtained under existing circumstances. Manufacturers of linens have about all that the spinners are disposed to sell. Foreign governments have been making extensive purchases for goods suitable for their armies whenever it has been possible to secure same, but their requirements have not been by any means made up by local manufacturers. The British government has been giving special attention to their requirements and it looks as though prices would advance further at an early date. This demand of course is for coarse material and it is to be hoped that in the near future good sized lots of Russian flax will come through from the Port of Archangel, as the stock of flax suitable for these numbers is nearly exhausted. The demand is for coarse numbers and the result is an increased consumption of flax. There is but little change in the medium and fine counts owing to the fact that the demand has not been overtaxed, but prices of fine yarns are as high at present as it is possible for the manufacturers to stand.

You know your production but—

Do you know what each machine, each operator, produces each day and each hour?
Do you know which men are money makers?
Do you know just where each job stands whenever you want to?

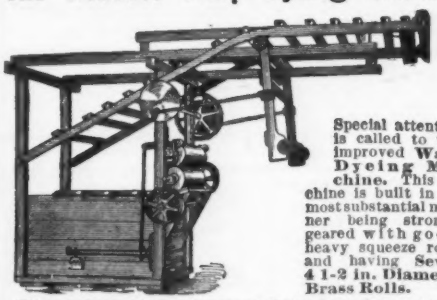
Durant Counters

Give you these exact figures which you need for economy in production and accuracy in cost calculation. Thirty styles, thirty days' trial. They have solved counting problems for your competitors.

Ask for Catalog 20 and free trial offer

Durant Mfg. Co., Milwaukee, Wis.
Wm. V. Threlfall . . Marshall Bldg., Boston
Charles Hammer . 620 West Broadway, New York

The Reliance Warp Dyeing Machine

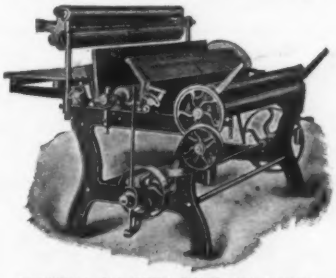


Special attention is called to this improved Warp Dyeing Machine. This machine is built in the most substantial manner being strongly geared with good, heavy squeeze rolls, and having Seven 4 1-2 in. Diameter Brass Rolls.

This machine, with our improved Plater-down has met with marvelous success, and parties desiring machinery of this class, can make no mistake on ours. For further particulars and prices, address

RELIANCE MACHINE WORKS
Hedge and Plum Sts., Frankford, Phila.

Wool Burring and Picking Machinery
Cloth Finishing Machinery



DEWING OR SPRAYING MACHINE

Curtis & Marble Mch. Co.
WORCESTER, MASS.

("A" Quality)

35s Lea on cones	1.00
50s Lea on cones	1.05
60s Lea on cones	1.10
80s Lea on cones	1.15
90s Lea on cones	1.20
100s Lea on cones	1.35
110s Lea on cones	1.45
120s Lea on cones	1.80

COTTON.

New Mills.

*Georgia, West Point. Contracts will be awarded early in July for construction of buildings for the new No. 3 Mill of the West Point Mfg. Company which is to be erected just south of West Point. As noted in previous reports J. E. Sirrine, of Greenville, S. C., is the architect engineer and has prepared plans for a 3-story spinning mill, 425 by 132 feet, with a weave shed, 325 by 132 feet, to be equipped with 25,000 spindles and 500 looms. This equipment will represent an investment of about $500,000. The product will be cotton duck.

*North Carolina, Laurinburg. Some progress has been made on the project headed by R. E. Lee to establish a 15,000-spindle cotton yarn mill in Laurinburg to spin yarns from low grade cotton. It is proposed to organize a company with capital stock of $300,000, to erect brick buildings and have electric power.

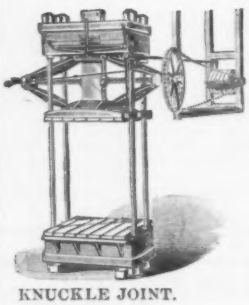
Enlargements and Improvements.

*Georgia, Columbus. Guy Garrard, manager of the Hamburger Cotton Mills, is quoted that when the plant resumes operations, which will be as soon as a new supply of black and blue dyes can be secured, they will be in the market for 8,000 spindles and accompanying looms and preparatory machinery.

Kentucky, Maysville. January & Wood Company, manufacturers of twines, lines and coarse cotton yarns, are placing contracts for additional machinery. Recently a warehouse and an addition containing some equipment were destroyed by fire with loss of about $40,000. The main mill was not seriously damaged.

*Maine, Biddeford. Additions to be made to the equipment of the present power plant of the Pepperell Mfg. Company on the completion of the enlargement, for which plans have been prepared by Densmore & Le Clear, mill engineers and architects of Boston, will include four 500 h. p. water tube boilers and a 4,000 k. w. turbine. This equipment has been contracted for. It cannot be stated at this time when the enlargement will be completed.

Maine, Lewiston. Machinery is being received at the large new weave shed of the Bates Mfg. Company. A small part of the equipment is running under the management of William C. Scott, formerly overseer in the Farwell Mills at Lisbon, who has been engaged to take charge of the new department.


KNUCKLE JOINT.

Boomer & Boschert

BALING PRESSES

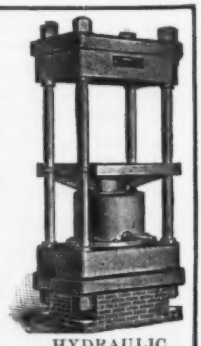
ARE THE STANDARD

Hydraulic or Knuckle Joint

Any Size Any Power

Boomer & Boschert Press Co.

338 WEST WATER ST., SYRACUSE, N. Y.


HYDRAULIC.

B & C

TRADE MARK

BARBER-COLMAN COMPANY

MAIN OFFICE AND FACTORY

BOSTON MASS. ROCKFORD ILL GREENVILLE S C.

HAND KNOTTERS AND WARP TYING MACHINES

Dobbins Soap Mfg. Co.

PHILADELPHIA

Makers of Soaps Especially Adapted for All Kinds of Textile Mfrs. Use. Send for Sample.

COTTON MILL NEWS

*Tennessee, Memphis. T. R. Winfield, president of the Business Men's Club; S. B. Anderson, and L. D. Falls, president of the American Bagging Company, form the Cotton Mill Committee of the Business Men's Club. They plan to organize a concern to be known as the Chisca Mfg. Company, with authorized capital stock of $500,000 and establish a 25,000-spindle cloth mill. Fifty teams have begun to take subscriptions and are meeting with considerable success. As noted in previous reports, the Business Men's Club has spent several months in assembling information from which to decide whether Memphis has the required advantages and conditions for the successful operation of textile mills, and finally decided that the city enjoyed numerous advantages for cotton manufacturing.

.....

Enlargements and Improvements.

Alabama, Birmingham. Twenty-three thousand new spindles and drawing and roving frames have been ordered by the Avondale Mills to replace old equipment. This will give a plant of 40,000 spindles in first-class condition.

*Alabama, Piedmont. Good progress is being made on the extension being built on No. 2 Mill of the Coosa Mfg. Company. When the addition is completed 10,000 spinning spindles and 5,000 twister spindles will be installed, bringing the equipment up to 40,000 spindles.

Connecticut, Danielson. Enlargements and improvements at the plant of the Quinebaug Company noted in January are being made. 250 looms for weaving pillow cases have recently been set up and 100 of these looms are running. In one of the wings where mule spinning has been done for years a number of spinning frames are being set up. Recently the capital stock was increased from $500,000 to $750,000 for the purpose of increasing the capacity about 30 per cent.

*Vermont, Burlington. McNally Bros., of Gardner, Mass., have the contract for building the addition to the weaving department of the Queen City Cotton Company. The new building will be 325 by 50 feet, 1-story high, of brick with saw tooth roof. As noted previously, 125 new automatic looms will be added. Ground has been broken.

.....

Mills Starting Up.

*Rhode Island, Valley Falls. The old Tilton Mills are being started up by the new Hansahoe Mfg. Company on 27-inch to 44-inch white and colored fancy wash goods. The new company was incorporated several weeks ago under the laws of Massachusetts with capital stock of $500,000 and acquired the Tilton Mills property. Donald M. Hill, 60 Federal St., Boston, president of the Renfrew Mfg. Company at Adams, Mass., is president of the new concern; Francis U. Stearns, 35 Thomas St., N. Y., treasurer of the Renfrew Mfg. Company, is treasurer of the new concern; Dana T. Gallup, Boston, is secretary. The directors include Messrs. Hill and Stearns and E. P. Hervey of N. Y., a director of the Renfrew Company; M. G. Chace, of Providence; and Walwin Barr, styler of F. U. Stearns & Company, N. Y., who will sell the product.

RATS AND CONTRACTS (ANNOUNCEMENT)

72 Front Street, New York, February 1, 1915.

To Mill Owners and Superintendents:

The VIRUS LIMITED INC. of 72 Front Street, New York, wish to announce that they have taken over the business formerly conducted by the DANYSZ VIRUS LIMITED, of the same address and that they are now prepared to accept yearly contracts for the extermination of rats and mice and that in connection with all such contracts the wonderful bacteriological preparation, DANYSZ VIRUS, discovered and prepared by Dr. Jean Danysz of the Pastuer Institute of Paris will be used exclusively. This company also manufactures a roach exterminator of the greatest merit and we will be glad to send a sample of same to those interested in giving same a trial. Write for full information.

Yours truly,

Department 4

VIRUS LIMITED INC.

JOHN E. KENDRICK, President MYRON FISH, Treasurer M. C. FISH, Secretary

American Supply Co.

Manufacturers of Reeds, Harness, Belting and General Mill Supplies

We make a specialty of Harness for American Warp Drawing-in Machine

OFFICE and STORE—135-137 Washington St., Providence, R. I. FACTORIES—Central Falls, R. I. and Fall River, Mass.

Thread and Silk SPOOLS of any description

Made from one piece, up to 6″ long and 3″ dia.

We are located in the best white birch region. Our work and prices seem to satisfy the most particular customers. We can give any finish desired. Estimates furnished on samples submitted

E. L. Tebbets Spool Company, Locke's Mills, Maine

SMITH & FURBUSH MACHINE CO.

PHILADELPHIA

Manufacturers of

PICKERS Lumpers; Rag, Burr, Wool, Cotton, Jute, Fearnaught and Garnett Pickers; also Rag, Carpet and Jute Shredders.

WILLOWS—Continuous Cotton Stock Opening, Cleaning, Metal Extracting and Condensing Outfit; also Square Box and Cone Willows or Dusters.

GARNETT MACHINES—For carding cotton and woolen waste clippings, etc.; also for manufacturing cotton, wool and jute batting or felts.

FEEDS—Self feeds for cotton, wool, worsted or jute; also Camel Backs, Blamires and Apperlys.

METALLIC BREASTS—Burring Machines and Self-Stripping Feed Rolls for Cards and Garnett Machines.

RECLAIMING MACHINE—For Opening and Cleaning various kinds of Cotton Mill Waste.

CARDS—Woolen, Worsted, Cotton Waste, Shoddy, Hair, Asbestos and Jute Cards; also Special Cards for the manufacture of Wool Hats.

MULES—Heavy and Durable for Wool and Waste Yarn.

TWISTERS—Plain or Fancy Twisters for Flake, Loop or Bourette Yarn.

BOBBIN WINDERS—Automatic Jack Bobbin Builder and Adjustable Creel for different length spools.

WARPING MACHINERY—Copper Cylinder Warp Dressers with single and double size pans; beamers; Section and Pinless Warp Mills, Creels and Dresser Spoolers for Wool or Worsted.

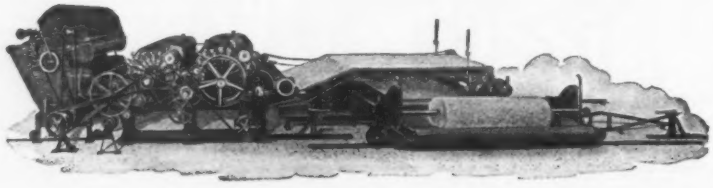
GRINDERS, Etc.—Floor, Traverse and Portable Grinders for Cards, Garnetts or Rag Pickers; also Turning Rests, Fillet Winders, Card Clothing Stretchers and Cleaning Frames.

Special Circulars furnished for each Machine

Felting Machinery for Manufacturing Soft Felts or Commercial Batts, for Mattresses, Comforts, etc. from Cotton, Cotton Waste, Linters, Jute, Wool and Wool Waste

A complete line of Machinery for Manufacturing Gunny Bagging from Old Gunny Bagging
Complete Equipment for Manufacturing Mop Yarn and Rope from Cotton Waste

Estimates and complete plans furnished



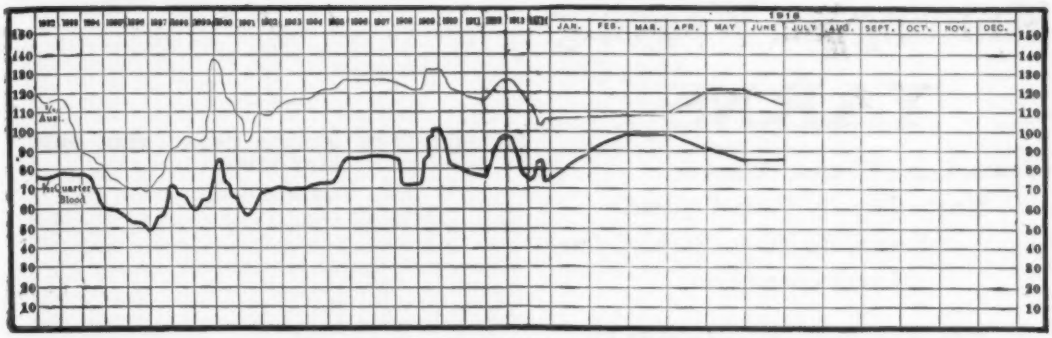
Standard Outfit "A" for Batts or Soft Felts

Such as are used for Mattresses, Comfortables, etc.

Circular R-14

We are builders of a complete line of Machinery for all sorts of Felts, Batts, etc., with either Garnetts or Cards, Blamire or Camel Back Lapper

Machinery for Making Absorbent Cotton



GRAPHIC CHART SHOWING RANGE IN PRICE OF WORSTED YARN.

THE WOOLEN AND WORSTED YARN MARKETS

Little or no change is reported by spinners since our review of the market in June. The buying trade just now seems to be playing a waiting game, their idea being that by holding off in the placing of orders for their yarns they will be enabled to buy at lower prices. Spinners claim that manufacturers who have the foresight to place their orders now will get their yarns at a better figure than by waiting until later, basing their claims on the fact that prices are bound to rise, as it is impossible at this time for them to go into the market and buy wools at the prices offered and make up yarns for the manufacturers at the prices offered. Yarn prices today are depressed and raw stock high, with every indication of going higher. The only reason why yarn prices have not gone up higher than they are is found in the large quantities of South American and Australian wool of the finer grades which are being shipped into the country. The embargo on low wools of course still exists and the wools of this low class are much higher in proportion than the finer grades of wools. Foreign wools today can be bought much cheaper than domestic wools.

The hosiery trade is rather quiet, their chief worriment being the extreme scarcity of dyestuffs, any number of mills reporting insufficient quantities of dyeing material on hand to last them for the balance of the year. The underwear trade is also quiet at this time.

The sweater trade has shown a decided improvement since our last report, although the big demand for silk sweaters seems now to be the center of interest in this trade but still some manufacturers claim that it is more or less of a fad and not a staple article and therefore are sticking to the old lines of woolen and worsted garments with the result that some good sized contracts for worsted yarns are being placed with the spinners for delivery between now and the end of the year. Indications point to the fact that their entire twelve months' business will have to be done between now and the end of the year.

BRADFORD SPUN YARN

2/12 to 2/16 low common	75-77½
2/20 to 2/24 low 1/4	77½-80
2/20 to 2/25 1/4 blood	80-82½
2/26 to 2/28 1/4 blood	82½-85
2/32 1/4 blood	85
2/20 3/8 blood	85-87½
2/26 3/8 blood	87½-90
2/32 3/8 blood	90-92½
2/36 3/8 blood	92½
2/40 1/2 blood	1.02½-105
2/40 delaine	1.07½
2/50 delaine	1.12½-1.15
2/40 Australian	1.10-1.12½
2/50 Australian	1.20-1.22½
2/60 Australian	1.27½-1.30
3/30 and 3/32 luster	95-97½
3/36 luster	1.10-1.12½

KNITTING YARNS

Dyed and Bleached—Bradford System

2/7s straight 1/4 blood	92½-95
2 and 3 ply 10s-20s straight 1/4 blood	95-97½
2 and 3 ply 20s-24s straight 1/4 blood	97½-99½
2 and 3 ply 24s-28s straight 1/4 blood	99½-1.01½

(Reduce 8c. for yarn in oil)

FRENCH SPUN YARN

1/20 1/4 blood	85-87½
1/20 high 1/4	87½-90
1/20 3/8	90-92½
1/20 high 3/8	92½-95
1/20 1/2 blood	95-97½
1/30 1/2 blood	97½-1.00
1/40 1/2 blood	1.02½-1.05
1/50 delaine	1.07½-1.10
1/40 Australian	97½-1.00
1/50 Australian	1.15-1.20
1/60 Australian	1.20-1.25
1/70 Australian	1.25-1.30

Knitting and Weaving YARNS

Cones, Cops, Warps, Skeins,
Single, Double, Three-Ply, etc.
Peeler, Egyptian, Mixed Colors.
Large Assortment

EDWARD S. HYDE
926 CHESTNUT STREET
Philadelphia, Pa.

William Whitman Co.
COMMISSION MERCHANTS
COTTON and WORSTED YARNS
BOSTON NEW YORK PHILA. CHICAGO CHARLOTTE

JAMES LEES & SONS CO.
MINERVA MILLS
Spinners of WORSTED YARNS
For Weaving and Knitting
In the Grey and in all colors and mixtures
Philadelphia Office: 627-29 Bourse Bldg.
Mills and Office: Bridgeport, Montgomery Co., Pa.

J. B. Jamieson
77 Summer St., Boston
COTTON YARNS
of all descriptions
Correspondence Solicited

HAROLD R. SHIRLEY
242 Chestnut St., Philadelphia, Pa.
French Spun Worsted and Merino Yarns
Bradford Spun Yarns
Woolen Yarns
FOR WEAVING AND KNITTING

FREE, A CATALOG of all important textile books sent on request by Lord & Nagle Co., Boston, Mass.

SOAPS HIGH GRADE **SOAPS**
Bleaching, Fulling and Scouring
SOAPS
Red Oil and Olive Oil Crown Soaps
SOAPS J. O. Draper Co. Est. 1860 Pawtucket, R. I. **SOAPS**

For two ply knitting twist add 5c. additional to above prices.
For two ply weaving yarns add 7 1/2c. additional to above prices.

FRENCH SPUN MERINO YARNS—FINE ONE-HALF BLOODS

Standard Grade

1/20 50/50 White Merino Cop	72
1/30 50/50 White Merino Cop	74
1/40 50/50 White Merino Cop	76
1/20 60/40 White Merino Cop	77½
1/30 60/40 White Merino Cop	79½
1/40 60/40 White Merino Cop	81½
1/20 70/30 White Merino Cop	83
1/30 70/30 White Merino Cop	85
1/40 70/30 White Merino Cop	87
1/20 80/20 White Merino Cop	88½
1/30 80/20 White Merino Cop	90½
1/40 80/20 White Merino Cop	92½
Sliver and Sanitary Mixes	3c. more
Coning on 1/20	2c. more
Coning on 1/30	3c. more
Coning on 1/40	4c. more

WOOLEN AND MERINO YARNS

Business with the spinners of woolen and merino yarns is picking up. No new contracts are as yet being placed, the spinners still working on contracts which expire early in July and contracts are not expected to be entered into until their books are cleared of old business. The consumers are still placing some orders, but on their old method of from hand to mouth buying. These orders call for almost all numbers in woolen yarns from 2/7s to 2/23s, ranging in price at 2/7s in colors at 72 1/2 cents and 23/2s at 75 cents. Prices at the present time remain stationary with no change being noted, but it is expected that when the manufacturer comes into the market for new contracts the tendency will be toward an advance. The sweater trade is now somewhat busier than they have been for some months and are beginning to make inquiries for yarns with the result that the spinner feels that the outlook for business after July 1st is rather bright.

WOOLEN AND MERINO YARNS

2/20 Light Grey Mixed	80%	20%	65
2/20 Light Grey Mixed	90%	10%	67½-70
2/20 Light Grey All Wool			70-72½
2/20 Colored All Wool			72½-75
2/20 Bleached	80%	20%	75
2/20 Bleached	90%	10%	77½
2/20 Bleached All Wool			80-82½
2/23 Colored All Wool			75
2/23 Bleached 90/10			85
2/23 Bleached All Wool			87½-90
2/25 Light Gree Mixed All Wool			90
2/25 Bleached All Wool			97½-1.00

THE RAG AND SHODDY MARKET

The rag market has been disturbed during the past month by the strike of rag sorters and as a result the graders who have been in the market for stock have been able to buy at some reduction from recently prevailing prices. The demand for graded material has been quiet, as spinners and shoddy manufacturers have been short of orders and are not inclined to buy on speculation. There has been some improvement in the export business, but the uncertainties caused by the war are likely to restrict this trade in the future. Shoddy manufacturers have had a quiet business owing to the dullness in the goods market. As a result they have bought but little stock and have been working on old contracts. The wool waste trade is quiet, but dealers profess to believe that the situation is one of great strength and that good business will develop in the fall. Cotton waste has been depressed by the weakness of the raw cotton market. The demand has been confined to the medium and low grades. We quote as follows:

SHODDIES AND EXTRACTS

White knit	38-40
Red flannel	20-22
Red knit	23-25
Thibelts	18-20
Fine dark merino No. 1	16½-17½
Fine light merino	28-29
Fine black merino No. 2	15-16
Light delains	25-26
Mixed delaine	12-13
No. 1 dark worsted	17-18
No. 2 dark worsted	16-17
Black worsted	18-19
Fine dark worsted clips	19-20
Blue serge, old	20-21
New blue clip	16-20
New black fine worsted clip	25-26
Light yarn, fine	28-30
Dark mixed, fine yarn	16-20
Dark blue hosiery clips, No. 1	17-20
Dark blue hosiery clips, No. 2	14-16

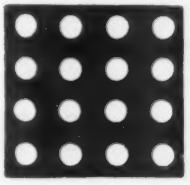
NEW WOOLEN RAGS

Fine merchant tailors	12-13
Choice light worsted	18-20
Fine gray worsted	20-22
Coarse gray clips	12-13
Fine dark worsted	14-16
Black worsted	22-23
Blue worsted	20-22
Brown worsted	17-18
Blue serge	19-20
Black serges	18-19
Light serges	20-22
Dark fancies	11-12
Dark serges	12-13
New blue flannel	15-16
New scarlet flannel	18-20

SOFTS AND KNIT STOCK

Soft woolen, best	9½
Red flannel	11¾
White softs	23½
Merinos, fine light	17-18
Thibets	11½-12
Knit stock, red	13½
Light gray, underwear	9½-10
Coarse gray	14½
Blue knit	12-12½
Mixed hoods	9
White knit stock	25-26

Woolen and Merino
YARNS
Eaton Rapids Woolen Mills
EATON RAPIDS, MICHIGAN



Perforated Plates for Wool Washing
Rinsing and Carbonizing
In Special Metal
BECKLEY PERFORATING CO.,
Garwood, N. J.

SPOTS
oil, grease and other mill stains quickly and permanently removed by the Sanitex Process. Machines installed in Textile and Knitting Mills, or Spotting done for the trade at reasonable rates.
The Sanitex Co., 33 Union Sq., N. Y., Dept. A.

Lowell Crayons
Meet the requirements of any cotton, woolen or worsted mill.
May we send samples? 15 colors and white
LOWELL CRAYON CO. Original Manufacturers LOWELL, MASS.
TRADE MARK ON EVERY BOX

OAK TANNED LEATHER BELTING
AND
PICKER AND ROLLER COVERING LEATHERS
CHARLES BOND CO., 520 Arch St., Philadelphia

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Skein Silk Dyeing of every description for every class of textile manufacture.

Hosiery Dye—Boil-off, weighting and dyeing, treated especially to meet the requirements of the hosiery and knitting trade.

Piece Dyeing and Finishing—All silk and silk mixed goods.

Printing—Surface and warp printing.

WORKS:

Paterson, N. J. Dundee Lake, N. J. Allentown, Pa. Williamsport, Pa.

THE SILK MARKET

The silk market at the present writing is a firm one and prices are advancing. This is probably owing to the fact that the manufacturers are in the market buying more freely than for some time. Many manufacturers have very little of the raw product on hand and now that a better feeling exists, quite a little activity has developed in the market.

In Yokohama it is reported that the market shows a stronger tendency and the new silk crop so far has sold well.

Shanghai reports market a little easier on new silk, while secondary grades of old silk are being offered at concession.

In Canton the market remains the same and is showing activity.

The Italian silk market reports an advance in the price of cocoons. It was stated that the crops this year would show a deficit and would probably cause a hardening of prices in the near future. This situation is reported from France which says that the new silk crop is not likely to average 50 per cent. of last year, owing in part to the war.

In Lyons, France, it is said that the manufacturers are handicapped for the want of help and also the scarcity of dyestuffs. This has had a tendency to curtail activity in the market, although prices remain firm.

The manufacturers in this country are quite optimistic, especially in the broad silk trade. The increase in yardage has helped these manufacturers perceptibly, and it is stated that many million more yards of broad silks will be used.

Ribbon manufacturers report a little better business and are hopeful that the fall trade and style will demand its regular quota of the finished product.

The cotton and woolen manufacturers are buying quite a little raw silk and it is expected that this activity will be increased in the near future. This cannot be said of the knitting manufacturers, who, although busy in their lines, have not bought large lots of raw silk of late. This situation, however, may reverse itself later on and these manufacturers again be active buyers.

The dry goods districts report a fairly good demand for broad silks, especially in novelty. Dark colors seem popular for fall, with the exception of a white taffeta which is selling well. All soft finished silks are still much called for, such as crepe de chene, charmuse, meteors and silk with

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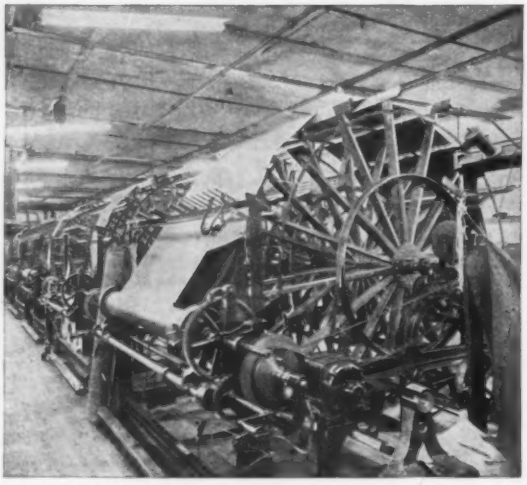

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Domestic Thrown Silk of every description. Fine Pure Dye Silks for the woolen trade a specialty. Importers of European and Asiatic Raw Silk.

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stripe effects. Many new colors for fall are on the market. Among them we find: Negro brown, blackberry, field mouse and battle green. Satin faced goods are sure to be popular the coming fall, while taffetas and velvets will continue to be in demand. At the present time the silk manufacturers feel that an increasing demand for their product will manifest itself. Unless all signs fail, there is a good prospect for an unusual fall business. Below are prices current:

European

Crand Extra Classical Piedmont	3.80-3.85
Extra Classical Italian 12/14 12/16	3.60-3.65
Best Classical Italian 13/15 24/26	3.45-3.50
Classical Italian	3.40-3.45

60 days' basis

Japan

Filature Kansai Double Extra Cracks	3.55-3.60
Filature Kansai Extra 13/15	3.40-3.45
Filature Shinshu Extra 13/15	3.35-3.40
Filature Kansai Best No. 1	3.25-3.30
Filature Kansai No. 1 13/15	3.22½-3.25
Filature Shinshu No. 1 13/15	3.18½-3.20
Rereels No. 1 13/16	Nominal
Rereels No. 1 1/2 13/16	Nominal
Rereels No. 1 1/2-2	Nominal

6 months' basis

China

Canton XXA Crack 14/16	2.85-2.90
Canton XXB Ordinary	2.57½-2.60
Tsatlee Blue Dragon and Flying Horse	2.55-2.60
Tsatlee Kun Kee Mars No. 1	2.30-2.35
Tussah Filature Eight Cocoons 1-2	1.02½

6 months' basis

SPUN SILK

The spun silk manufacturers report a much greater activity in the demand for their product and are very optimistic. Whether this increasing demand will cause a rise in prices is problematical. At the present time prices for all numbers remain the same.

60/2	3.60
50/2	3.50
40/2	3.40
30/2	3.25
20/2	3.15
10/2	3.05

ARTIFICIAL SILK

Manufacturers of artificial silk also report business in a much better condition than our last writing, and they are now looking for a good fall business. This is owing partly to the fact that the braid manufacturers are again using this product in the manufacture of their goods. Prices have advanced to some extent and all quotations available are below:

150 Deniers English A.—Bleached	2.15-2.20
150 Deniers English B.—Bleached	2.00-2.05
150 Deniers English C.—Bleached	1.80-1.85

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Bindings and Ribbons
For binding Cotton and Woolen Bed Blankets, Go-cart Covers, Kimonas, Bath Robes, etc.
Special Colors or Shades made to order

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Tram, Thrown Silk, Organzine, Artificial Silk
Domestic and Imported, Plain, Gassed and Mercerized. Polished and Glazed Cotton, Mohair, Worsted and Tinsel.
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Makes stencils in half a minute, at reduced cost of 1-10 cent each.
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So it costs you NOTHING to have the AMERICAN WATCHMAN'S CLOCK. Fully approved by all insurance companies. We equip factories with Fire Alarms, Signals, etc., also Employee's Time Recorders, and Telephone Systems. Electric Time System consists of Master Regulator in office with secondary electric clocks throughout the mill, insuring accurate time. Send for particulars.
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AND CHEAPER.
We make other specialties.
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JERSEY CITY, NEW JERSEY

SILK.

.....

New Mills.

*Pennsylvania, Dorrancetown. Construction contract for the new silk throwing mill to be erected for the Duplan Silk Company has been awarded. As noted in a previous report the new building will be 2 stories and basement of reinforced concrete and brick, 161 by 420 feet, and will be equipped with air washing, heating, cooling and humidifying and sprinkler systems, also electric power equipment. The main plant is at Hazleton, where a large new weaving mill is to be erected.

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Enlargements and Improvements.

Canada, Ontario, Brantford. Arrangements have been made by the Niagara Silk Mills, Ltd., for the erection of a dye house. At present the silk is being sent to Galt to be dyed. This is a branch of the Niagara Silk Mills of North Tonawanda, N. Y.

New Jersey, Paterson. The Paterson Silk Company has just added ten new broad silk looms and other machinery to their plant in the Atherton Mill.

New Jersey, Paterson. Surasky Bros., who recently moved to the Neuviller Mill, have placed six more looms on their floor.

New Jersey, Paterson. M. Goldberg, who is located in the Todd Mill, will lease the space formerly occupied by the Regal Silk Company and will install some machinery now and more later on.

New Jersey, Paterson. The Regal Silk Company has moved from the Todd Mill to the Barnert Mill, Grand St. and Railroad Ave. They will add more looms at an early date.

New Jersey, Paterson. The Royal Silk Mfg. Company, who have been located in the Essex Mill, will move next week to the Ashley & Bailey Mill. An increase in equipment will be made.

New Jersey, Paterson. An increase of ten looms will be made in the plant of the Fulton Silk Company when they move to the Ashley & Bailey Mill at an early date. They now make broad silks on 18 looms.

New Jersey, Paterson. The M. & S. Silk Company have moved into a different part of the Bell Mill and have ordered more looms which will soon be installed.

New Jersey, Paterson. Margolin & Baten have taken over the space formerly occupied by the M. & S. Silk Company in the Bell Mill and are putting in looms to fill the space.

New Jersey, Paterson. The Novelty Silk Company are placing 10 new broad silk looms in their plant in the Waverly Mill. They formerly had 8 looms. They are a partnership consisting of Isaac and Israel Sarver and Samuel Perlovitz.

*New York, Wayland. The capacity of the addition being built at the local plant of the Huguet Silk Company is 128 looms. No further improvements at the Hornell plant are contemplated.

MISCELLANEOUS.

New York, New York City. Howlett & Hockmeyer Company, Inc., have established a new plant for making velvets and cordurovs for ladies' wear in New York. A concern known as the Waterside Mills will do the converting, and as soon as the Waterside Mills are established more particulars will be available. These are both new concerns and we reported the incorporation of the Howlett & Hockmeyer Company, Inc., under the laws of New York with capital stock of $50,000 several weeks ago. The new concerns are understood to be affiliated with Hockmeyer Bros., 345-47 Broadway, N. Y., and the Waterhead Mills, Inc., of Lowell, Mass. These old concerns will go on as usual manufacturing for men's wear. It was noted recently that a 4-story addition to be equipped for dyeing, bleaching and manufacturing is to be built at the Waterhead Mills in Lowell.

Pennsylvania, Marcus Hook. Plans are being prepared for two buildings to be erected for the American Viscose Company, manufacturers of artificial silk, calling for a one story building of brick, 158 by 423 feet, and another building two stories of brick and concrete, 44 by 73 feet.

Pennsylvania, Philadelphia. A contract has been awarded to a local builder for the erection of a two story building of brick, 40 by 100 feet, for Charles Devlin, cotton and woolen waste manufacturer at Kensington Ave. and Hilton St. This building will take the place of the one recently destroyed by fire.

Pennsylvania, Philadelphia. The Wrights Manufacturing Company, with John Wright as proprietor and superintendent, has installed a number of machines on the top floor of the building at 5120 Wakefield St., Germantown, where laundry and dyebags are being manufactured and sold direct.

Pennsylvania, Philadelphia. John Keeley, engaged in the second hand machinery business at Nicetown Lane and Kensington Ave., is reported as having disposed of the machinery on hand and arranging to equip the building, which is two stories, of stone, with machinery for the bleaching of cotton fabrics.

Pennsylvania, Philadelphia. The old Dale Mill, 1717 to 1723 Gillingham St., Frankford, has been sold to Otto Zschamisch of the Vigilant Mills, manufacturer of upholstery fabrics at Adams and Leiper Sts. The building is being remodelled for the purpose of using it as an annex of the Vigilant Mills who are installing winding and beaming machinery and will also use it for storage purposes.

Pennsylvania, Philadelphia. The contract has been awarded for the enlargement of the dye and bleach plant of Brehm & Stehle, Trenton Ave., below Allegheny Ave. The operation will consist of a one story reinforced concrete, brick, stone and steel building, 44 by 52 feet. The permit has been granted and the operation will start at once.

Pennsylvania, Philadelphia. The Textile Dyeing & Finishing Company, Inc., dyers and finishers of woolen, worsted, cotton and union piece goods, finishers of dress goods and men's wear and bleachers and redyers, have recently enlarged their building and installed a considerable amount of additional machinery. The plant, which is located at Frankford Ave. & Willard St., and is under the superintendency of W. R. McConachie, well known in New England in this line of business, is very busy.

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Importers and Manufacturers of
Our Specialty:
DYED SILK FOR THE KNITTING TRADE
on cones and tubes
RAW and THROWN SILK, ARTIFICIAL SILK
Mercerized and Cotton Yarns, Yarns and Threads
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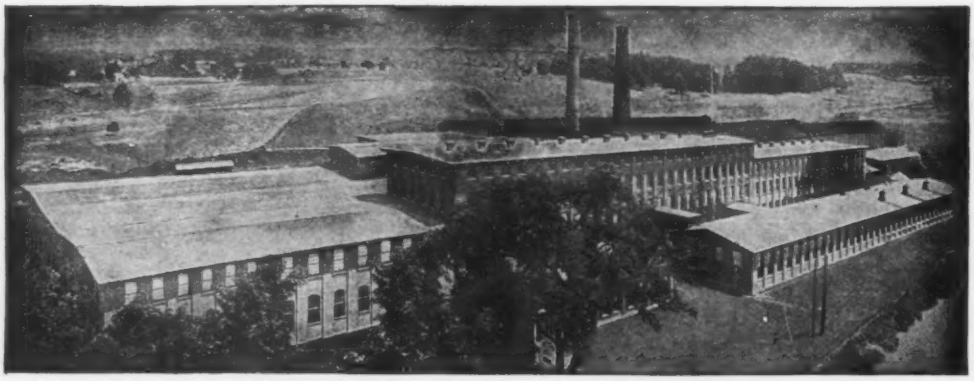
Bias and Straight Cut Fabrics and Ribbons.
Embossing and Cutting Customers Own Goods a Specialty.



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Sheetings, Shirtings, Lawns, India Linons.
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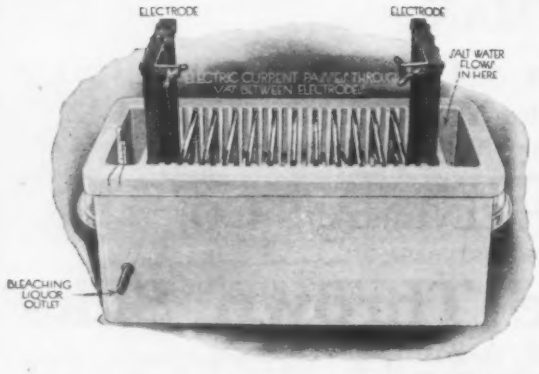

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having many years ago passed the experimental stage. We have sold Electrolyzers to many of the large Knitting Mills, both hosiery and underwear, and so far are not aware of any purchaser not being thoroughly satisfied. There is absolutely no question about its merits.

Write, giving amount of lime used daily, current available, with costs.

We make machines of special construction for any purpose.

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ASSETS, January 1, 1915 ..... $35,313,539.27
LIABILITIES (Except Capital) 16,610,065.11
SURPLUS AS REGARDS POLICY HOLDERS... 18,703,474 16
Losses Paid Since Organization over 156,000,000.00

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DYESTUFFS AND CHEMICALS

The unsettled conditions in the dyestuff and chemical trades caused by the European situation make it impossible to get quotations which would be of any value to our readers. The dyestuff and chemical list of quotations will therefore be omitted until this trade is again on a normal basis.

FIRES.

Canada, Ontario, London. The plant of the Thomson Knitting Company has been destroyed by fire with loss estimated at $50,000, covered by insurance. The blaze originated in a quantity of cotton waste, according to report. Men's and women's seamless hosiery was manufactured on 50 latch needle knitting machines, 15 ribbers and 10 sewing machines. John Watson is superintendent and W. W. Thomson, buyer.

New York, New York City. Fire in the basement of the building at 55-57 W. 3rd St. compelled Dorfman Bros., manufacturers of knit ties, to close for several days. Their plant was not damaged.

Indiana, La Porte. A fire in the plant of the Wallace & Smith Blanket Mills, believed to have been caused by spontaneous combustion, caused considerable loss.

Massachusetts, Worcester. Sparks from a picker in the plant of George E. Duffy Mfg. Company caused a fire which released the water sprinklers and caused damage estimated at about $500. The operation of the mill is not interfered with.

North Carolina, Worth. The plant of the Harden Mfg. Company, O. D. Carpenter & Sons, proprietors, has been destroyed by a fire which started in the power department. The loss is $170,000, with $155,000 insurance. Cotton yarns were manufactured on skeins and tubes. O. D. Carpenter & Sons state that they hope to rebuild when matters are settled.

MISCELLANEOUS.

Massachusetts, Webster. The Stevens-Linen Works, which have been shut down for several weeks owing to inability to procure raw material from Europe, have resumed operations with all hands back at work on a schedule of forty hours a week. Raw material has been received which will keep the plant running for four weeks but it is expected that a further supply will be received before the end of the month.

*New Hampshire, Milford. Jute, linen and union canvas for the clothing trade will be manufactured by the Milford Mfg. Company, the new concern which has leased the old linen mill here. Operations will be started about June 15, with 66 looms. At first yarns will be bought, but it is planned to add a spinning department later on. Maurice A. Goldman, of Mackintire, Lawrie & Co., 282 Devonshire St., Boston, is agent and buyer, and Thomas M. Morrow is superintendent. Mr. Goldman states the new concern has ample financial backing which will become apparent when the proposition is more fully developed.

Technical High School, Buffalo, N. Y.
Architect, Martin C. Miller, Buffalo, N. Y.
General Contractor, Mosier & Summers, Buffalo, N. Y.
Roofers, Kelker Blower Co., Buffalo, N. Y.

Photo. by A. H. Schaefer, Buffalo, N.Y.

Barrett Specification Roofs

On a modern building—

Here is the handsome new High School at Buffalo, New York—a fine example of first-class, modern construction throughout.

It is covered with a Barrett Specification Roof.

Now that the roof is completed it will not be necessary for the authorities to give any further thought to it for twenty years or more. It will require no painting, no repairs, no maintenance cost of any kind.

These roofs take the base rate of insurance and are approved by the Underwriters' Laboratories.

It is a bit unusual, perhaps, to find that the cheapest permanent roof to build is also the *best* roof—yet that is the case with Barrett Specification Roofs. Their low cost and long life account for their high standing and popularity with first-class engineers, architects and roofers.

To be sure of getting a Barrett Specification Roof on your building, send to our nearest office for a copy of The Barrett Specification with diagrams and *incorporate same in your building plans.*

We should like to send every architect, engineer and building owner a copy of the Underwriters' Laboratories report on Barrett Specification Roofs. Address our nearest office.

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FALL RIVER MILLS

	Bid.	Asked.
American Linen	...	56
Arkwright Mfg. Co.	60	64
Barnaby Mfg. Co.	...	50
Barnard Mfg. Co.	...	54
Border City Mfg. Co.	105	...
Bourne Mills	100	...
Chace Mills	102	104
Charlton Mills	85	90
Coanicut Mills	...	95
Cornell Mills	145	...
Davis Mills	...	*103½
Davol Mills	90	...
Flint Mills	100	...
Granite Mills	75	...
Hargraves Mills	42½	...
King Philip Mills	106	...
Laurel Lake Mfg. Co.	95	100
Lincoln Mfg. Co.	72½	75
Luther Mfg. Co.	121	...
Merchants' Mfg. Co.	79	...
Mechanics Mills	75	80
Narragansett Mills	90	...
Osborn Mills	...	98½
Parker Mills	42½	...
Pilgrim Mill, pfd.	...	95
Pocasset Mfg. Co.	80	90
R. Borden Mfg. Co.	130	140
Sagamore Mfg. Co.	180	190
Seaconnet Mills	...	58
Shove Mills	73½	...
Stafford Mills	67½	75
Stevens Mfg. Co.	125	...
Tecumseh Mills	105	...
Troy C. & W. Mfg. Co.	...	...
Union Cotton Mills	175	180
Wampanoag Mills	68	72
Weetamoe Mills	70	80

*Ex dividend.

NEW BEDFORD MILLS

Acushnet Mill	157½	...
Beacon Mfg. Co., com.,	102	...
Beacon Mfg. Co., pfd.,	112½	...
Booth Mfg. Co., com.	30	...
Booth Mfg. Co., pfd.	75	...
Bristol Mfg. Co.	72½	77½
Butler Mill, com.,	...	75
Butler Mill, pfd.,	...	100
City Mfg. Co.	84	...
Dartmouth Mfg. Co., com.	...	165
Dartmouth Mfg. Co., pfd.	100	...
Gosnold Mills, pfd.	...	92
Grinnell Mfg. Co.	*125	*130
Holmes Mfg. Co., com.	127½	...
Holmes Mfg. Co., pfd.	...	116
Hathaway Mfg. Co.	150	...
Kilburn Mills	120	130
Manomet Mills	...	121
Nashawena Mills	...	80
Neild Mfg. Co.	...	112½
N. E. Cotton Mills Corp., com.	100	...
N. E. Cotton Mills Corp., pfd.	97½	100
Nonquit Spinning Co.	...	89
Page Mfg. Co.	75	...
Pierce Mfg. Co.	300	...
Pierce Bros.	100	...
Potomska Mills	124	126
Quisset Mills, com.	...	123½
Quisset Mills, pfd.	...	112
Sharp Mills, com.	80	...
Sharp Mills, pfd.,	...	104
Soule Mills	77	...
Taber Mills	97½	...
Wamsutta Mills	...	122
Whitman Mills	125	130

*New stock.

SOUTHERN MILLS

American Spinning Co.	155	.....
American Spinning Co., pfd.,	100	...
Arkwright Mills	...	100
Avondale	120	120
Arlington	130	140
Brookside	...	...
Cannon	140	...
Carbarrus	115	...
Chadwick-Hoskins	...	...
Chadwick-Hoskins, pfd.,	...	100
Clara	100	...
Cliffside	175	...
Columbus Mfg. Co.	94	100
Darlington	...	83½
Erwin, pfd.	...	101
Easley	...	175
Florence	125	130
Gibson, com.	...	108
Grendle	...	96
Glenwood	...	150
Glen Lowry, pfd.	...	76
Highland Park	151	200
Highland Park, pfd.	...	100
Hartsville	175	195
Hartsville, pfd.	...	100
Henrietta Mills	...	125
Kesler	140	160
Loray Mills, pfd.	...	86
Modena	...	96
Monarch, S. C.	115	...
Newberry	125	...
Norris Mills	...	121
Ninety-Six	130	140
Orr	...	86
Ozark	100	110
Pacolet Mfg. Co., pfd.	100	...
Patterson	140	...
Piedmont Mfg. Co.	150	167
Pell City, Ala.	...	80
Poe, W. F., Manufacturing Co.	100	103
Salisbury	150	...
Roanoke Mills	...	155
Saxon	...	...
Spartan	100	110
Toxaway	...	131
Warren Mfg. Co., com.,	78	...
Warren Mfg. Co., pfd.,	...	107
Washington Mills	...	...
Washington Mills, pfd.	...	100
Woodside Mills Co., com.,	...	88½
Woodside Mills Co., pfd.,	...	80
Woodside Mills Co., guar.	...	101
Watts	...	85
Williamson	...	125
Ware Shoals	70	...
Whitney	110	120
Woodruff	...	107
Young Hartsell	90	...

MISCELLANEOUS.

.....

*Canada, Ontario, Brantford. An extension, 60 by 60 feet, is being built to the raw material warehouse of the Brantford Cordage Company, Ltd., and an addition, 40 by 100 feet, is being built on the finished goods warehouse. Both enlargements will be of fireproof construction. In 1913-14 additions were made to the equipment which increased the output 100 per cent. and further extensions or the erection of a new plant are under contemplation. Binder twine is manufactured. C. L. Messecar is general manager and buyer.

*Connecticut, New Haven. An addition is being built to the plant of the Forsyth Dyeing Company, 1-story high, 150 by 186 feet, to be used as a storehouse and grey room, and will be completed about August 1. The plant is running 24 hours a day. They are dyers of cotton piece goods. William H. Forsyth is president and buyer; Leslie E. Forsyth, treasurer; and Thomas Forsyth, superintendent.

*Connecticut Niantic. Within two weeks it is expected that the Thames Dyeing & Bleaching Company's new plant here will be in operation. The plant at New London was destroyed by fire in March and within a few weeks property in Niantic, formerly occupied by the Knickerbocker Typewriter Company was purchased with additional land from the New Haven R. R. Plans were made immediately for a new plant, consisting of the old building on the property and two new buildings, which are now practically completed and will be in use in slightly more than three months after the fire at New London. The two new buildings erected are about 150 feet long and 75 feet wide. The old building on the property is to be used as a storehouse when it has been equipped with a sprinkler system. The Connecticut Power Company has extended its lines to the new plant and will supply current for power and lighting.

*Massachusetts, Lawrence. The Plymouth Mills will have an increase of 100 per cent. in floor space when the new 6-story addition now under construction is completed. An addition of fifty per cent. in machinery equipment will be made. The new building has a frontage of 157 feet, and is to be pushed forward as fast as possible. The Plymouth Mills manufacture carpets, art squares, and fibre matting, and have 2,000 twister spindles and 128 wide looms. The capital stock is $200,000. I. D. Einstein is president; I. Solomon, treasurer, and H. A. S. Read, agent and buyer. The New York office is at 1115 Broadway.

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MANUFACTURERS OF
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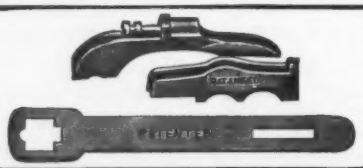

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Brushes
For Every Known
Fabric
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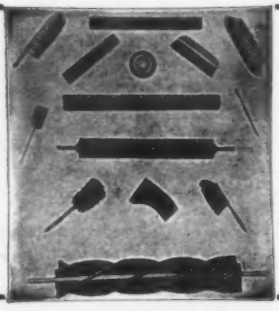

Mason Brush Works
Worcester, Mass.
Agt. and Mgr.
CHAS. A. O'NEIL

FACTS AND GOSSIP.

.....

California, Pasadena. The headquarters of the American & Mexican Ramie Comany, Inc., recently reported organized under the laws of New York with capital stock of $250,000, are at Pasadena. They are growing ramie in Lower California producing the fiber by machinery patented by G. W. Schlichten, president of the concern, and selling the fiber in the market.

*Canada, Ontario, Carleton Place. Eighty hands are being employed in the Hawthorne Mills making blankets, men's heavy half hose, and underwear on 5 sets of cards, 30 knitting, 8 sewing machines and 10 looms. The old plant of the Waterloo Company has been taken over. C. W. Bates, president of Bates & Innes, Ltd., of this place, and Richard Thomson, are the proprietors. Carl Hey is superintendent. The product is sold by Wilson & Patterson, of Montreal and Toronto.

Connecticut, Putnam. The Waterman Worsted Company finds a larger production necessary and as present quarters do not allow expansion the concern will seek a larger mill or build an addition. They are not ready to give out any information at present. For some time two shifts of operatives have been employed and in the near future a three-shift schedule may be entered upon. Yarn dyed men's wear is manufactured on 32 looms. C. F. Waterman is agent and P. L. Waterman, superintendent.

Georgia, West Point. The Lang Cotton Mills deny the report that they are considering disposing of their weave room equipment and changing over the plant to a coarse yarn mill. It has been rumored that owing partly to the scarcity of dyestuffs and partly because of the lessening of the demand for lap robes, they would take out and dispose of, or store, their looms and double their spinning capacity.

Georgia, White Hall. J. R. White, president and treasurer of the Georgia Mfg. Company here, and associates, have incorporated a new company under the name of the Georgia Mfg. Company with capital stock of $120,000.

Maryland, Baltimore. The Turner-Halsey Company has been appointed selling agents for the Mt. Vernon-Woodberry Mills, the new arrangement taking effect on July 1.

Massachusetts, Barrowsville. There are indications that the Barrowsville Bleachery may be reorganized. During the week a new corporation was formed under the laws of Massachusetts, with capital stock of $800,000, classified as $300,000 preferred stock, and $500,000 common, which will take over the plant, according to report. About a year ago the Barrowsville Bleachery was petitioned in bankruptcy and William F. Winter, of Fall River, was appointed receiver.

Massachusetts, Boston. The Herald Thread Works, Inc., reported organized during the week with capital stock of $50,000, conducts a business of manufacturing and selling threads at 18 Kingston St., Boston. Werner Bros., dealers in tailors' trimmings at 18 Kingston St., are interested.

Massachusetts, Boston. The business of John W. West Company, 184 Summer St., winders of and dealers in cotton shoe threads, has been incorporated with capital stock of $25,000. There is no change in the management.

Interruption of Production

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are so liberally designed and so sturdily constructed that they will operate for years without need of repairs providing they are properly supplied with oil while in service.

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IT is entitled "Lubrication of Textile Machinery" and we have reserved a copy for YOU. If you will promptly send us your address we will be happy to mail YOUR copy. No obligation whatever.

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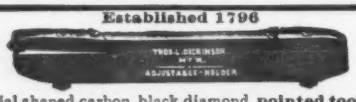

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Worden Chemical Works

4 Cedar Street, New York

Kaumagraph Transfer Stamps

in Gold and Colors for all fabrics

KAUMAGRAPH COMPANY

209-219 West 38th St., New York City

FACTS AND GOSSIP.

Massachusetts, Rutland. The plant of A. C. Moulton has been placed on a four-day schedule owing to the difficulty in securing dyestuffs and the high cost of raw material. Satinets are manufactured.

Massachusetts, West Millbury. Current reports of a fire in the plant of the Millbury Scouring Company are greatly exaggerated. The company states that the loss does not amount to more than $5.

Minnesota, Stillwater. The State Prison Twine Factory is being operated day and night and the output will be much larger than last year.

Missouri, St. Louis. The coal tar crudes collected at the new plant of the Laclede Gas Light Company will not be used in the manufacture of dyestuffs. This new plant was recently built and equipped at an expense of $2,000,000 and the entire output has been contracted for.

New Jersey, Camden. The United States Wool Combing Company has been organized with capital stock of $125,000 to conduct a general wool combing business. The incorporators are John A. Bottomley, president and general manager of the Highland Worsted Mills, of Camden, N. J.; Frederick H. Middlebrook, who was formerly employed by the Middlebrook Wool Combing Co., of East Boston, Mass., and Frank H. Benrath. The new concern has no connection whatever with J. A. Middlebrook, president of the Middlebrook Wool Combing Co., Inc., of East Boston, or with the Middlebrook Wool Combing Co., Inc., of East Boston.

New Jersey, Morristown. Articles of incorporation of the Seyer Silk Dyeing & Finishing Company have been filed. The principal office of the company is at 614 Main St., Boonton, with James V. Bean as agent. The company is authorized to manufacture and deal in silk and other fabrics and has an authorized capital stock of $125,000. The incorporators are Joseph Seyer, of Paterson; Fred E. Hoof, Paterson, and Albert R. Morrison of Boonton.

New Jersey, Paterson. Nothing definite toward starting up a plant has been done by Daniel Green, whose plant was recently destroyed in the Atherton Mill fire.

New Jersey, Paterson. Ashley & Bailey have rented space in one of their mills to J. Zingler, now located in the Addy Mill on Ryle Ave. No increase in equipment will be made now but may be later in the season.

New Jersey, Paterson. Space has been leased in the Warren St. Mill of Ashley & Bailey by the Globe Silk Mills, into which they will move on Saturday. No increase in machinery will be made at present.

New Jersey, Paterson. The Progress Silk Company, whose plant was burned in the fire at the Atherton Mill, are getting machinery together and have leased space in the Ashley & Bailey Mills on Warren St., in which they will manufacture broad silks.

FACTS AND GOSSIP.

Canada, Ontario, Carleton Place. Richard Thomson and C. W. Bates, president of Bates & Innes, Ltd., have arranged to take over the Hawthorne Mills at Carleton Place which they have been operating for some months on army contracts, and establish a permanent industry making hosiery and wool blankets.

*Canada, Ontario, Galt. P. F. Fitch, who heads the new Riverside Silk Mills recently organized to do a silk throwing and winding business, was formerly manager and buyer of Narrow Fabric Weaving & Dyeing, Ltd., of Galt. As noted in previous reports the new Riverside Silk Mills will establish a 1,000-spindle plant.

Connecticut, Killingly. A charter has been granted the Killingly Worsted Mills with capital stock of $10,000 to manufacture and sell woolen and worsted goods. The incorporators are William L. and E. H. Litch, and William F. Mulligan. It is understood the new corporation succeeds the Glen Worsted Company which operates a plant here of 5 sets of cards and 32 looms.

Delaware, Wilmington. Louis Topkis has purchased a plot of ground on French St. on which it is reported a mill will be built for the manufacture of men's underwear. It is understood that construction work will be started within a short time.

District of Columbia, Washington. Sec. Redfield, of the Department of Commerce, has worked out a table from the issues of the Textile World Record from January to April, 1915, and from the daily issues of the New York Journal of Commerce during the month of April, showing that 83 new corporations or firms have engaged in the manufacture of textiles during the first four months of the year.

Georgia, Columbus. At the annual meeting of the stockholders of the Swift Spinning Mills the reports of the officers show that the concern has enjoyed an increasing business. The old officers and directors were reelected.

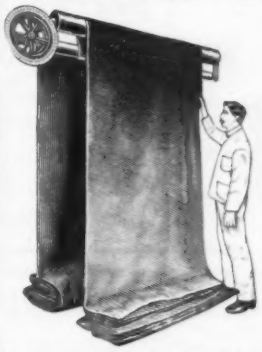
Georgia, Columbus. A small part of the yarn mill of the Perkins Hosiery Mills is working at night to get out some extra yarn needed. C. L. Perkins, president of the company, denies the report that a large part of the plant is on a night and day schedule and that the concern is advertising for night help, as stated in current reports.

Illinois, Chicago. The concern known as the B. & M. Knitting Mills, which has been currently reported has established a knitting plant at 720 W. 12th St., does not manufacture but conducts a business of jobbing knit goods.

Illinois, Galena. The Galena Glove & Mitten Company has been incorporated with capital stock of $45,000 to manufacture gloves, mittens and other knit goods. The incorporators are George T. Millhouse, W. P. Swing and William Slaats.

*Iowa, Atlantic. The knitting machines and sewing machines of the Atlantic Knitting Company are being offered for sale and the concern is going out of business. It was noted recently that the plant is shut down. Sweater coats and fancy knit goods were manufactured.

PERCH CLOCKS



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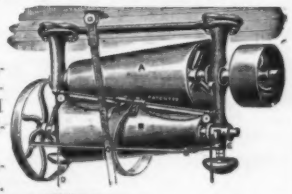
Variable Speed Countershafts

Evans Friction Cone Pulleys



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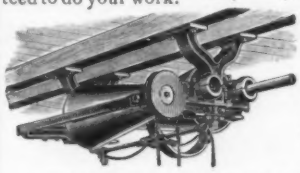

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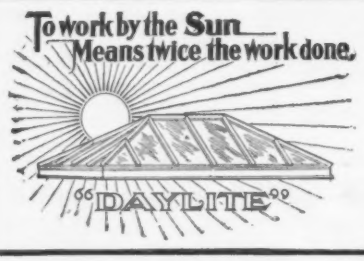

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SAVE	THE CHAFFEE PATENT CLOTH BOARD, Made of paper and wood, Needs no covers, Will not split or warp; Not liable to break. BOX SHOOKS and CLOTH BOARDS.	Clean
Their Cost		LIGHT
In Freight	MFG. BY CHAFFEE BROTHERS COMPANY, OXFORD, MASS.	Strong

FACTS AND GOSSIP.

Massachusetts, Boston. Emmons Bros. Co., manufacturers of wool hats, with a main factory in Haverhill, and a branch plant at 49 Melcher St., Boston, are trying to sub-let the quarters on Melcher St., preparatory, it is said, to removing the Boston plant to the main factory at Haverhill. An office will be continued in Boston.

*Massachusetts, Fall River. Frank L. Carpenter, treasurer of the Davis Mills, states that no arrangements whatever have been entered into by the Davis Mills for taking over the plant of the Barnaby Mfg. Company. There has been considerable talk in mill circles to the effect that the Davis Mills might purchase the Barnaby plant. The two mills are located near each other and it is said the plan to consolidate them appealed favorably to some of the Davis Mill directors. Mr. Carpenter's statement indicates that no official action has as yet been taken.

*Massachusetts, Framingham. Machinery in the manufacturing department of Brown, Durrell Company is to be sold as soon as possible. It was noted in April that the Brown, Durrell Company would discontinue their knit underwear plant as a result of the selling connection made with the Harvard Mills of Winship, Boit & Company, Wakefield. The plant in Framingham is equipped with 36 knitting and 45 sewing machines, and made ladies' cotton union and combination underwear, under the management of A. F. Abbott.

*Massachusetts, Lawrence. With regard to reports that plans are being made for improving the Atlantic Mills, the Pacific Mills, who now own the property, state that they are not doing any building now and that they do not intend to build at present.

Massachusetts, Medway. An attempt was made to burn a large storehouse of the Fabyan Woolen Company but no damage was done either to the building or to the contents. It is said that cloth valued at $60,000 was stored in the building.

Massachusetts, Northampton. The strike in the McCallum Hosiery Company has been settled and the operatives have returned to work.

Massachusetts, New Bedford. More machinery is being started up by the Dartmouth Mfg. Corp. and other local mills.

Massachusetts, Pittsfield. The Pontoosuc Woolen Mfg. Company is advertising for spinners for night work. The concern is very busy on orders for export.

Massachusetts, Westboro. Business is increasing at the plant of Joseph S. Mason & Sons, manufacturers of narrow fabrics, tapes, etc., and more operatives are being put to work.

Massachusetts, Worcester. The property of the Darling Woolen Mills Company has been sold at private auction to Mark Harris, of New York.

*Michigan, Ann Arbor. The Ann Arbor Lace Company, recently incorporated with capital stock of $10,000, began operations the first of the month, making curtains, draperies and laces. Charles E. Gallup is president, and William M. Laird, is treasurer.

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We Build
Hand and Power Elevators
in all sizes and capacities with all modern safety appliances
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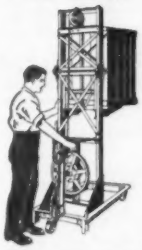
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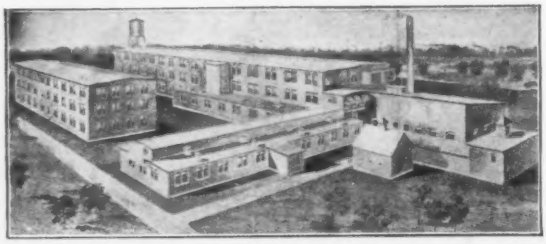

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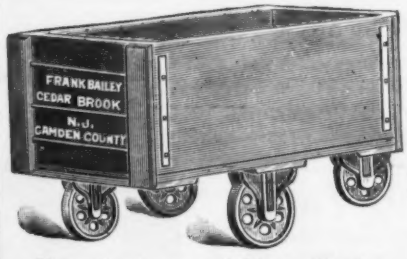

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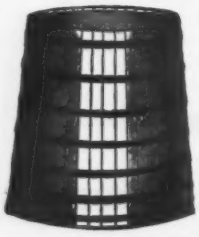

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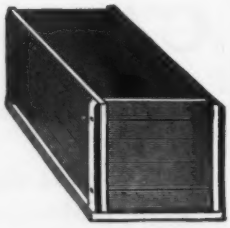

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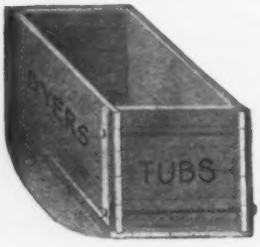

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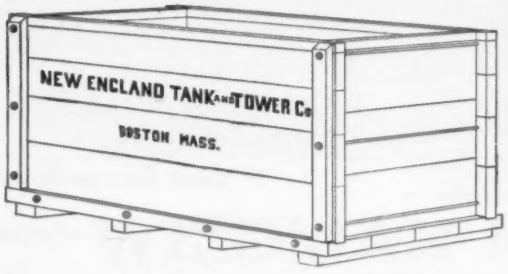

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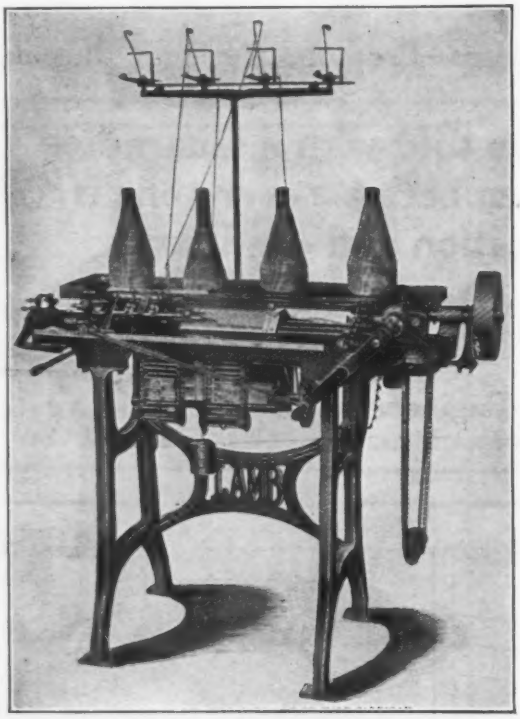

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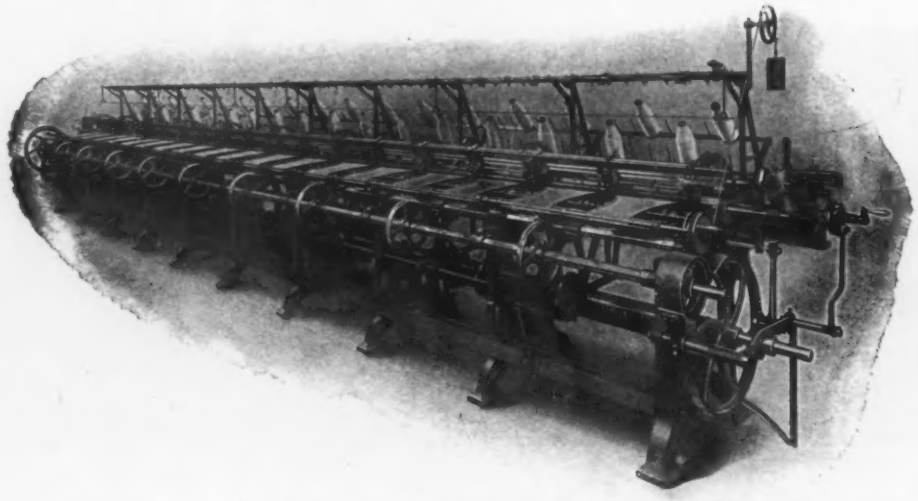

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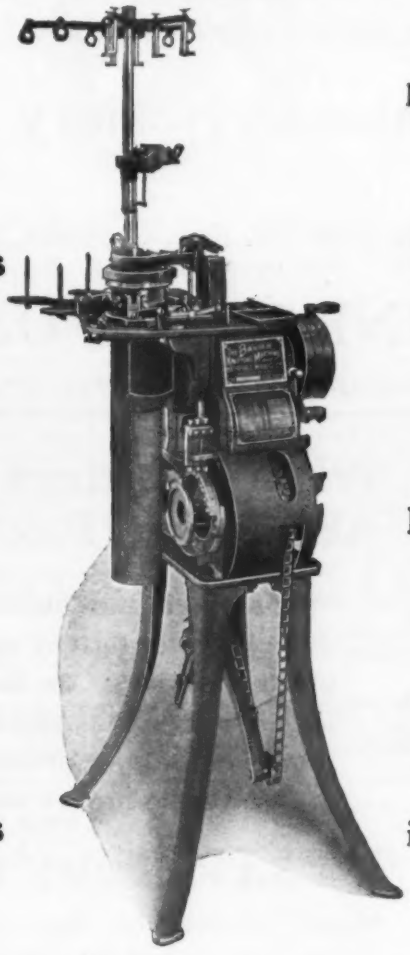

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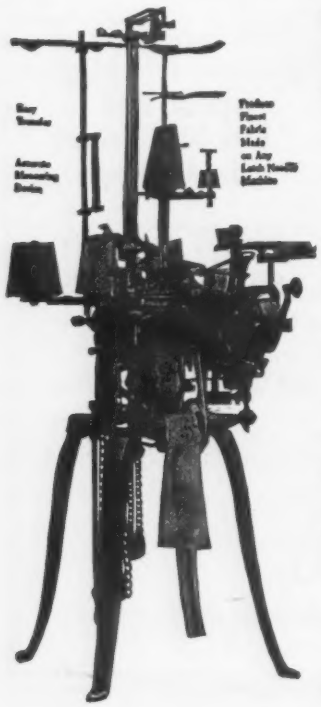

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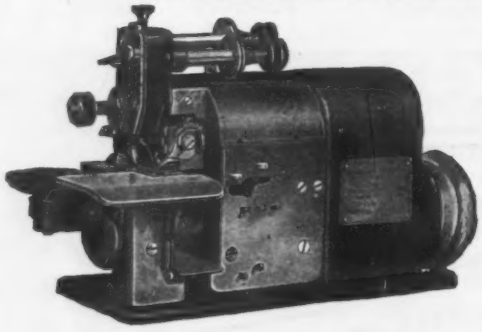

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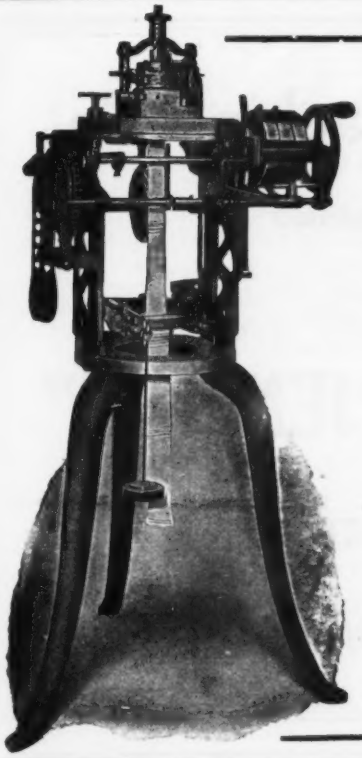

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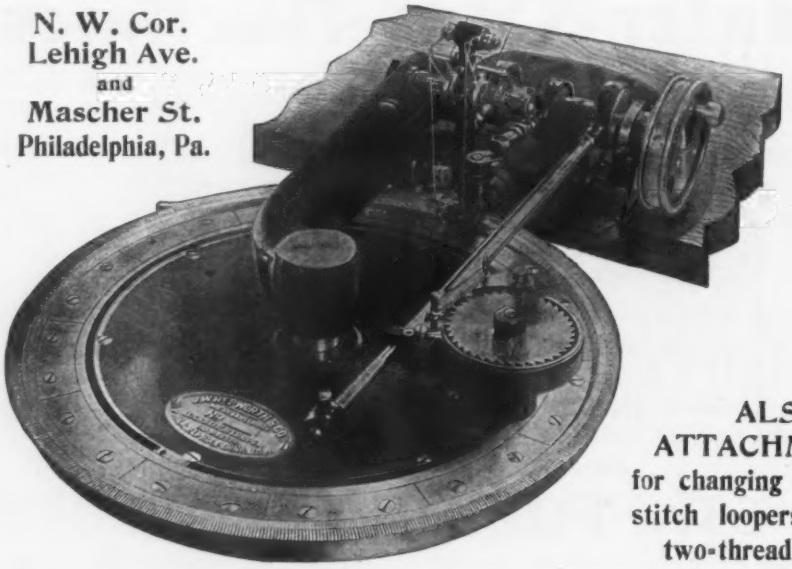

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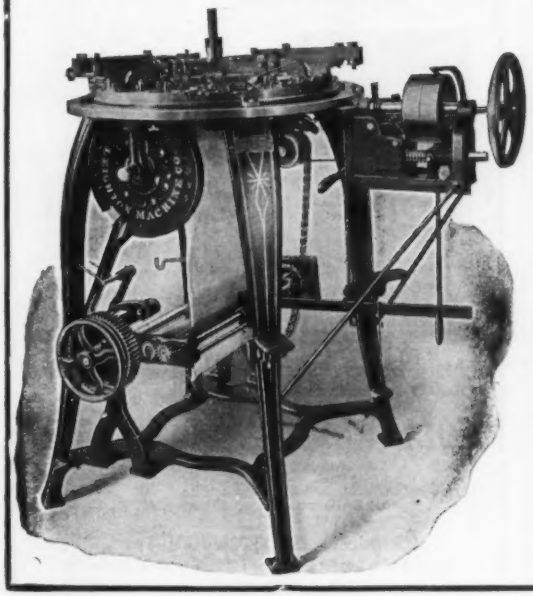
340 North Twelfth Street, Philadelphia, Penna.

THE LEIGHTON KNITTER

HAS EARNED THE REPUTATION OF PRODUCING



Firm, Elastic Garments

USING LOW GRADE STOCK

THESE MACHINES ARE
BEING USED FOR

High Grade Goods

MORE AS COMPETITION INCREASES

Real Efficiency

Means Excellent Stitches with ECONOMICAL OPERATION

For Particulars ask

LEIGHTON MACHINE CO.

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WILLCOX & GIBBS SEWING MACH. CO NEW YORK

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Over 6,000,000

knitted garments, chiefly union suits have been

FLATLOCK SEAMED

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You, too, can make a perfect union of

ABUTTED CUT EDGES

no thicker than the fabric itself

and produce a strong, soft and smooth FLAT SEAM if you use our new

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Domestic and Foreign Patents on Both Machine and Product

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Chief Office

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"Acme" and "Hemphill"

SEAMLESS HOSIERY

Knitting Machines

built by

Acme Knitting Machine & Needle Company

FRANKLIN, N. H.

Answer all purposes in the *most reliable*, *up-to-date*, and *economical* manner. Write us for full particulars.

Manufacturers Like our Latch Needles

because we make a superior grade of needles

Philadelphia Office, Bourse Bldg.

CHARLES COOPER

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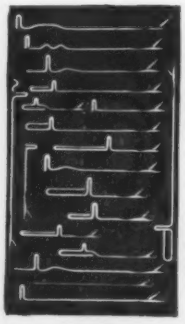

Knitting Machinery

Flat and Circular Rib, both Spring and Latch Needle, Plain Circular Machines, Lead or Trick Cylinder, **Spring Needle Cylinder Rib-Top Machines** for making Cuffs, Drawer Bottoms and Shirt Borders, **Spring and Latch Knitting Needles, Burr Wheels, Burr Blades, Sinkers, Jacks, etc.**

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NYE & TREDICK CO.

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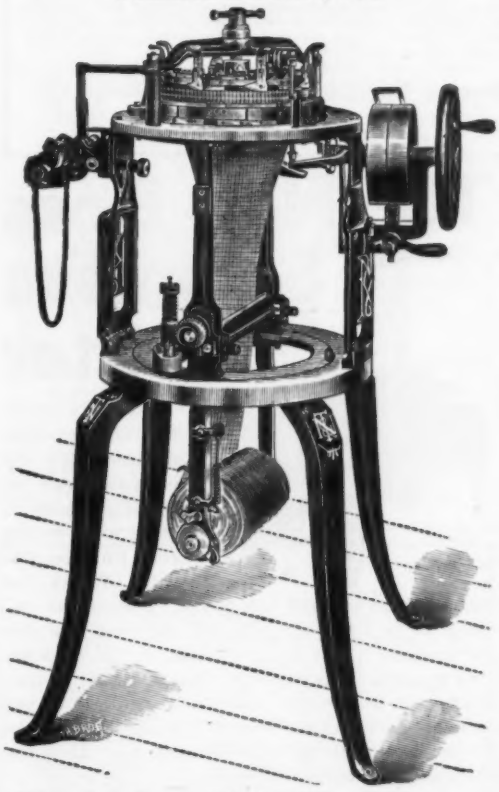
PHILADELPHIA, PA.



Circular Rib Knitting MACHINERY

For making Ribbed Underwear, Combination Suits, Sweaters, Cuffs, Shirt Borders, Hosiery, etc. Correct Construction, Excellence and Durability.

LATEST IMPROVEMENTS

Quality of Fabrics and Production
UNEXCELLED

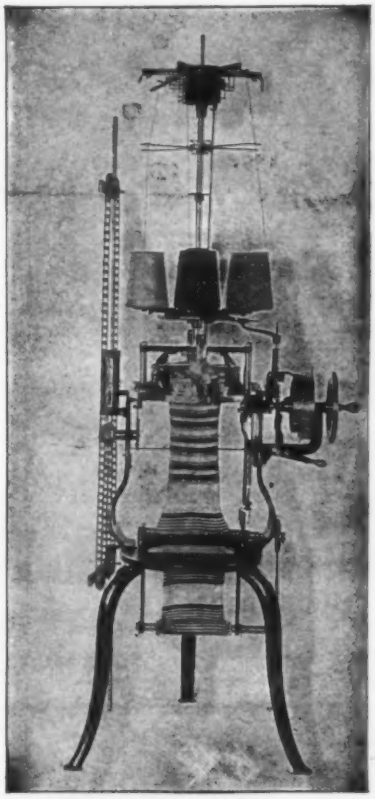
NYE & TREDICK CO.

1915

CRANE MFG. CO.

Established 1870 — LAKEPORT, N. H. — Incorporated 1890

Spring and Latch Needle Machines
for Both Rib and Plain Work
Economically Producing
A GREAT VARIETY OF FABRICS



Improved Automatic 3-Colored Plain Striper.

SOME CRANE FEATURES

Improved Spring Needle Underwear Machine for Shirts, Drawers, Jersey Cloth, Astrachan and Stockinet.

Frames of any guage and diameter required can be furnished from 12" to 32".

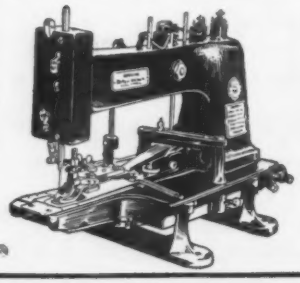
Patent removable hardened Wing Burr Wheels.

Patent Thread Stop Motion can be fitted to 20" and 32" frames and are specially adapted for making fine Jersey Cloth and Stockinet.

Our flat machine is adapted for knitting collarettes.

BUTTONS PUT ON TO STAY ON

No bobbins to wind. Will sew all buttons with any thread. No threads to trim. Saves 90% of the needle breakage.



Elastic Stitch Button Sewing Machine

saves money for manufacturers, and helps them increase the demand for their products. Without increasing the expense to the manufacturer, the Elastic Stitch Button Sewing Machine sews buttons on garments in such a way as to allow for thread shrinkage and to stand the wear and tear of the laundry, as well as giving to the buttons the same uniform finish that the tailor would give, and avoiding, as the tailor does, the drawn down, tight effect that is unavoidable when a two thread machine is used.

Send for proof and "List-of-Users" booklet.

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Agents Everywhere

HOW MUCH OF THIS

$10,000,000.00

DO YOU WANT?

About $10,000,000.00 worth of full fashioned stockings are made in America each year.

No matter what proportion of these millions you are now getting, you can get more of it if you will make full fashioned hosiery on our machines.

Because, the stockings you make will fit perfectly and bring you repeat orders.

The leading hosiery manufacturers are installing these machines.

If you are thinking of making full fashioned goods take up the question with us—as our success depends upon yours, we will prove to you that we can help you before you spend a cent.

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THE MAKERS OF AMERICAN FULL FASHIONED HOSIERY MACHINES

The New Boss Seamless Knitter

Do you want the biggest production with the least menders, for the least money? If so, write to the Boss Knitting Machine Works for their circular with full directions. There is no cylinder to be handled. We use only one cylinder and transfer device for half hose or ladies' hose. This machine beats them all. Has no equal for simplicity and durability. Makes 300 revolutions per minute. Built in sizes from 2¼ to 5½; from 40 to 224 needles. Automatic in heel and toe. It is the strongest built knitter on earth.

Send for prices and particulars.

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ALL STYLES AND KINDS FOR FLAT AND ROUND BRAIDS

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The Allen Winders.

Single Side Machines from 6 to 24 Spindles
Double Side Machines from 8 to 18 Spindles to a Side

FOR ART or NATURAL SILK, COTTON and MERCERIZED YARNS.

Built especially for

HOSIERY and UNDERWEAR

All Winders Equipped with Special Swifts for Silk, Art Silk and fine yarns.

Small Winders are very useful in Back Winding ends of Cones, or sample skeins, or legs of hosiery that are waste.—The machine illustrated is our No. 1 machine with a perfect fast and slow motion, winding a perfect bobbin that will all knit off.

Also Special Winders for Sweater Mfrs.

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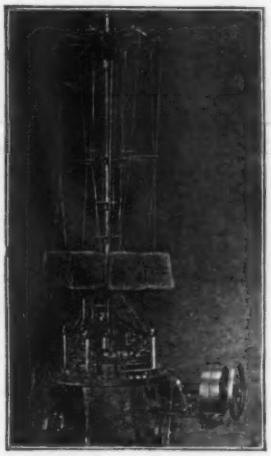

For all makes and sizes of

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Twenty Years of Experience and Success

Adapted for **HEAVY SWEATER** yarns as well as **UNDERWEAR** work

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NEW BRUNSWICK, N. J.

MACHINERY FOR

Making Cones

Cop Tubes and Straight Shells

For textile and manufacturing purposes

Knitting looms for millinery, dress and upholstery trimmings

JOHN EPPLER MACHINE WORKS
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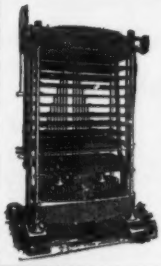

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PLATE PRESS

For Knit or Woolen Goods

The most reliable machine of the kind on the market.

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Successors to
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Established 1868 **NASHUA, N. H.**

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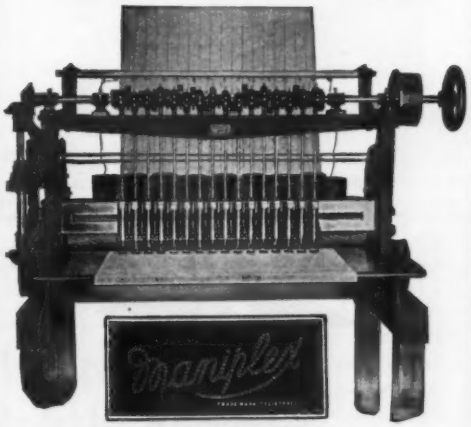

For Multiple Stitching

Built for all purposes where a number of rows of stitching are required. ¶ With either form of stitch, single thread chain, double thread chain, or lock stitch, sewing material from 1-16 inch thick, up to 1 inch thick, and up to 120 inch wide. ¶ Furnished with any desired number of needles, spacing to suit requirements. ¶ We also build **Paper Slitting Machines** and design special machinery.

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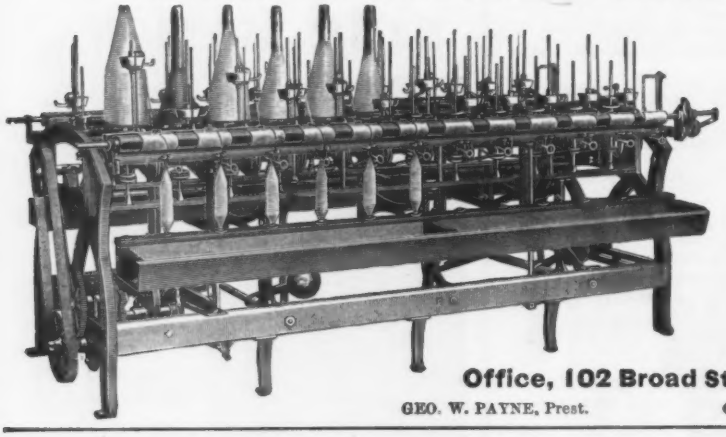
Walpole, Mass., U. S. A.

OVER 1,900 PAYNE WINDERS IN USE

By Hosiery Manufacturers, Wind for Cop, Skein or Bobbin



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Upright Spoolers

To Spool from Cop, Skein or Bobbin

Doubling Spoolers for doubling 2, 3 or more ends into one

Upright Quillers, Quill from Cop, Skein or Bobbin.

Ring Dresser, Spooler and Reel Spindles, Cop Skewers, Warp, Spool, Spooler Guides. Bolsters and Stops Made and Repaired at Short Notice.

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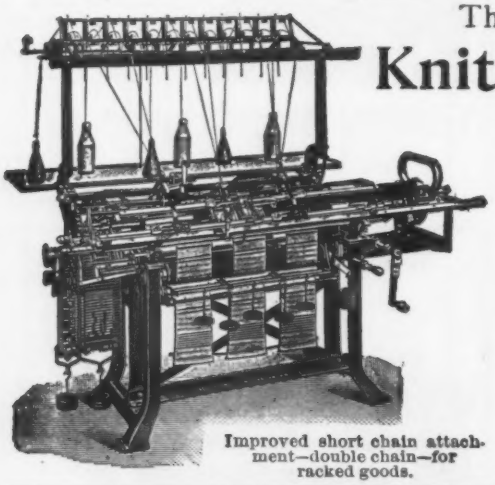
GEO. W. PAYNE, Prest. CLINTON F. PAYNE, Sec'y and Treas



Improved short chain attachment—double chain—for racked goods.

That is the Brand of the

Knitting Machines

worldwide known to be **The Best**

160,000 Knitting Machines in use all over the Universe

CLAES & FLENTJE

Muhlhausen Thr., Germany

(Largest Knitting Machine Factory in the World)

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Machines for all kinds of plain and fancy knit goods by hand and full automatic by power.

Our knitting machines are far superior to any other in simplicity and construction. They give a higher production than any other on the market.

For full particulars, needles and supplies for all kinds of knitting machines, write to

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Eureka Fire Hose

Is a four ply CIRCULAR woven not FLAT woven hose like the ordinary kind, that possesses great strength and durability.

It will protect lives and property.

Made in all sizes. Can make prompt delivery.

EUREKA FIRE HOSE MFG. CO.

27-29 Barclay Street **NEW YORK**

We Are the Oldest Manufacturers

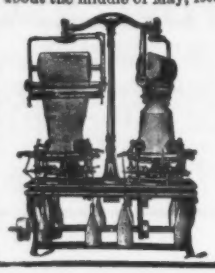
IN THE WESTERN HEMISPHERE

Of Circular Spring Needle Loop-Wheel Knitting Machinery.

TOMPKINS BROS. CO., Troy, N.Y.

We submit the following extract from the sworn testimony of R. W. Gormly, in U. S. Circuit Court, Northern District of New York, in equity, No. 6764:

Cross Question 123. How long have you been a manufacturer of knitting machines? Answer I started in this business about the middle of May, 1900.



Tompkins Knitter

This design was adopted in 1875.

BUSINESS ESTABLISHED in 1846, before **ROBERT W. GORMLEY** Was born, according to his testimony in the case above cited.

50%

Better than ever from YOUR standpoint

Several New Features

have been added to the "1912" Cloth Cutting, Folding and Winding Machine which *add at least 50% to its value to YOU.* It will cut your cloth—fold the edges—roll it up and give you an exact measurement of every piece of cloth going through the machine. It saves time, labor, machines and cloth.

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Mail a card for complete information and prices. When in need of special machinery write me.

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Machine for rapid and Economical Method of Attaching Labels to Hosiery or other Garments.

Uses pointed staples, cannot tear the finest fabric.

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STANDARD "G"

¶ A New Type of Hosiery Machine—being the result of 22 years of actual experience in studying the needs of the trade.

¶ Your investigation desired.

¶ Can be seen running at all times.

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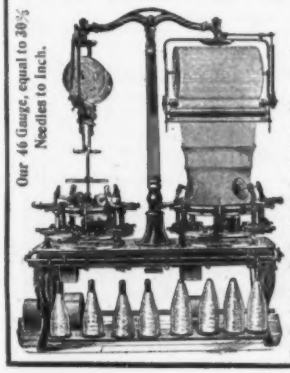
We are the Oldest Manufacturers



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45 Years Practical Experience

in building Spring Need e Knitting Machines. Have succeeded in knitting the finest and coarsest work ever made on Spring Needle Knitting Machines in this country, any work from 3 to 46 gauge.

The above machine will also produce our new patent cloth made with a staggered needle.

Here's a Quick Drying Ink

Haereo Indelible Ink

that is guaranteed not to wash out of any fabric when applied as per instructions. ¶ Neither sulphur, lime nor peroxide bleach effect it. ¶ We will leave the proof of our claims to the sample we will send on your request.

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CONTINENTAL LATCH NEEDLE CO.
NEW YORK
THE WORKMANSHIP AND QUALITY OF OUR GERMAN NEEDLES ARE UNSURPASSED OUR SCREW RIVET DOES NOT GET ROUGH OR LOOSE
LARGE STOCK OF NEEDLES FOR ALL AMERICAN AND FOREIGN KNITTING MACHINES
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The Science of Knitting

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330 Pages, Illustrated *Price $3.00 Postpaid*

Some of the contents are—

Yarn Numbering and Calculations; Elements of Knitting; Formulas for Ribbed Fabrics; Width of Tubular Goods for Different Numbers of Needles aud Yarns; Width of Fabrics from Different Machines; Production of Circular Knitting Machines; Weight of Goods; Twist in Knit Fabrics; Set; Space Allotment in Knitting Mills; Knitting Machine Gauges; Range of Fabrics from the Same Gauge or Cut; Burs; Spring Needle Latch Wheel Tuck Stitch Figures; Vertical Patterns in Latch Needle Work; Cams; Inserting Needles in Ribber; Take-Up; Locating Source of Trouble in Knitting; Designing with Pattern Wheels; Theory of Knit Fabrics; Ratio and Proportion; Weights and Measures; Mensuration; Miscellaneous Notes on Belting; etc.

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Longer Wear, Less Mending, Better Work, Fewer Seconds.

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Largest Manufacturers of Machine Needles in the World.

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Needles for all makes of Knitters and Ribbers
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Cuts and turns at one operation
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AMERICAN BUILT
Full Fashioned Knitting MACHINES
and Stripers for all makes of machines
We are rigged up to do anything from a knocking over bit to a finished Cotton frame. Also repair and change machines from the coarsest to the finest gauge.

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Manufacturers of
RAG PRESS BOARDS
Especially Adapted to
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Medals awarded at Paris and Melbourne Expositions.

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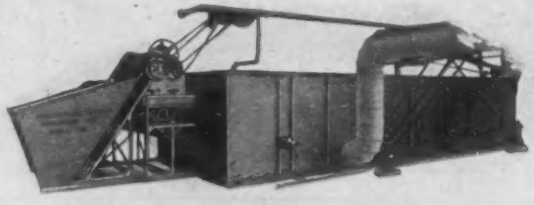

Proctor Automatic Dryer for Cotton, Wool, Etc.

These dryers give greatest capacity at least cost

If you do any drying at all
Send for our illustrated book Y

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An absolute necessity!

Every boiler of a battery should be provided with a

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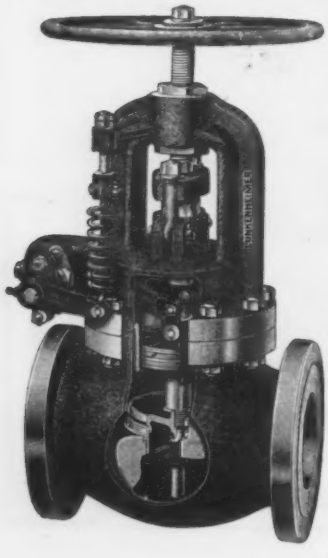

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Made in **Horizontal** and **Angle** Patterns, sizes 3 to 10 inches inclusive, in six combinations of materials for working steam pressures ranging up to 350 pounds and temperatures to 800° Fahrenheit.

Ask your dealer for descriptive booklet or write for general catalog.

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"QUALITY"
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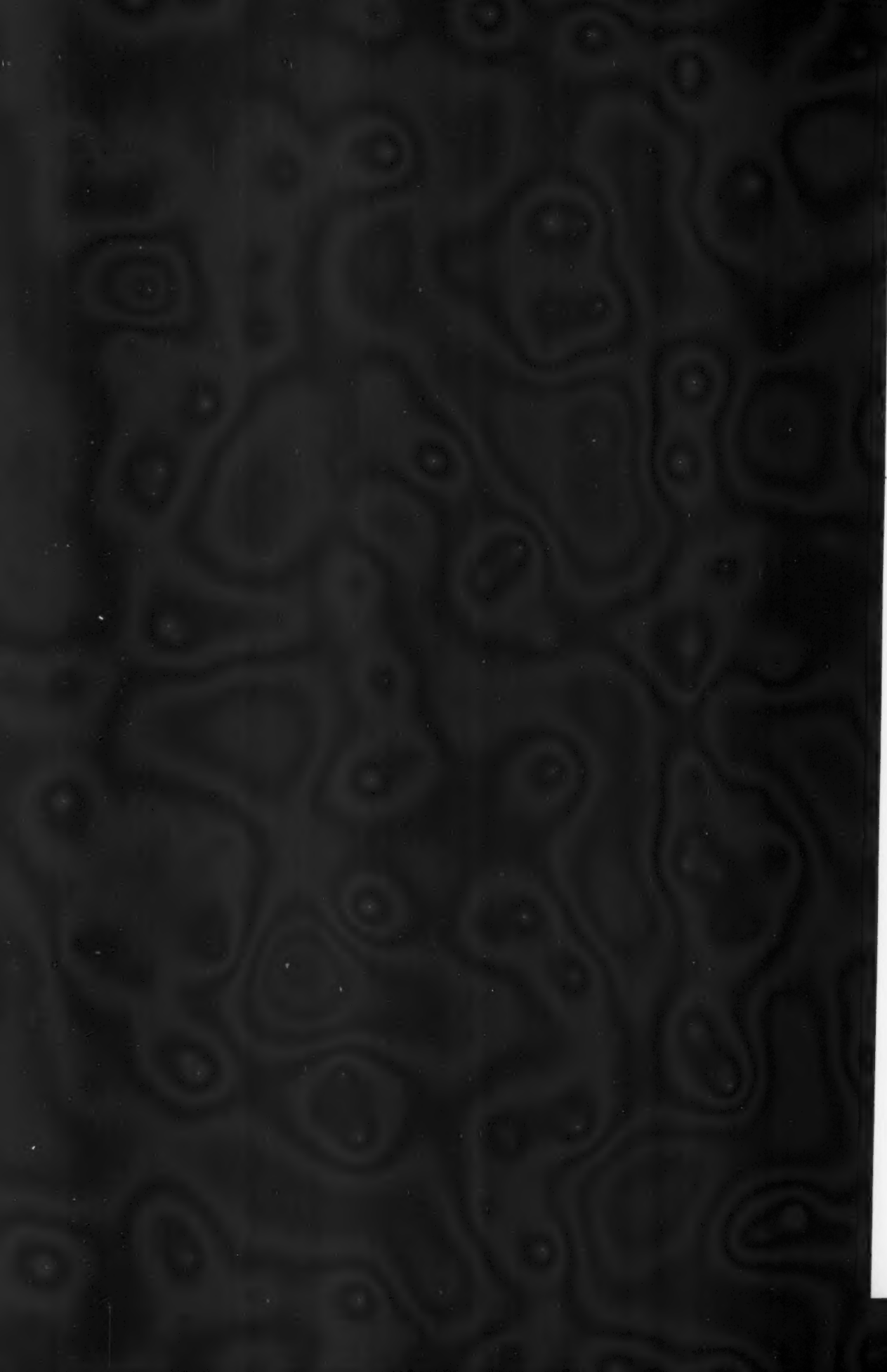

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550 motors in use—some over a year. "Not one moment's shutdown from motor troubles" New Jersey mill.

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For Canadian business refer to Canadian General Electric Company, Ltd., Toronto, Ont.

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